



HAMPDEN TOWN COUNCIL
HAMPDEN MUNICIPAL BUILDING
AGENDA

.....
MONDAY

JULY 19, 2021

6:00 P.M.
.....

- A. PLEDGE OF ALLEGIANCE
- B. APPROVAL OF THE AGENDA
- C. CONSENT AGENDA
 - 1. SIGNATURES
 - 2. COUNCIL MINUTES
 - 3. COMMUNICATIONS
 - 4. COMMITTEE MINUTES
- D. PUBLIC COMMENTS
- E. POLICY AGENDA
 - 1. NEWS, PRESENTATIONS & AWARDS
 - 2. PUBLIC HEARINGS
 - a. For questions or comments regarding the status of the Pine Tree Landfill and the water quality.
 - 3. NOMINATIONS – APPOINTMENTS – ELECTIONS
 - a. Public Notice – Nomination Papers are available for November 2, 2021 Municipal Election.
- F. COMMITTEE REPORTS
- G. UNFINISHED BUSINESS
- H. NEW BUSINESS
 - a. Council determination of rate of interest to be applied to be paid on overpaid and abated taxes – *pursuant to Title 36 MRSA Section 506-A*
 - b. Council award of Route 1A Western Ave Traffic Signal Design, *requested by Victor Smith, Public Works Director.*

Note: Council will take a five-minute recess at 8:00 p.m.

.....
MONDAY

JULY 19, 2021

6:00 P.M.
.....

AGENDA
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- c. Council action on permanently changing the physical location of Hampden's Voting Place from the Municipal Building, 106 Western Avenue, to the Skehan Recreation Center, 1 Main Road North.
- d. Council action on a resolution to officially name the Grist Mill Bridge the Wheeler Grist Mill Bridge, *referred from workshop*.

I. MANAGER'S REPORT

J. COUNCILOR'S COMMENTS

K. EXECUTIVE SESSION - pursuant to 1 M.R.S.A. section 405(6)(c) to include the Town Manager and Economic Development Director.

L. ADJOURNMENT

Note: Council will take a five-minute recess at 8:00 p.m.

FOR THOSE THAT WISH TO PARTICIPATE IN THE
REMOTE HAMPDEN TOWN COUNCIL
WORKSHOP ON JULY 19, 2021 AT 6:00 PM YOU
MAY PHONE IN USING THE FOLLOWING
NUMBER (FOLLOWED BY THE PIN #)

1-475-675-3571 PIN 798 899 794#

OR-

FROM A LAPTOP OR A DESKTOP, YOU MAY GO
TO THIS URL: [meet.google.com/bvz-oarr-
ctq](https://meet.google.com/bvz-oarr-ctq) AND JOIN US THAT WAY

INSTRUCTIONS ARE POSTED WITH THE AGENDA
AND SEPARATELY ON THE TOWN CALENDAR AT
WWW.HAMPDENMAINE.GOV

Using Google Meet to Participate in Hampden Town Council Remote Meetings

How to join:

1. Town Council members will receive an email or a Google Calendar Invite with a link to join the meeting.
2. People interested in joining will need to go to the link posted on the town events calendar at www.hampdenmaine.gov.
3. Anyone can also join for audio-only participation by calling the number provided on the town events calendar and then entering the PIN provided followed by the # symbol.

Protocols for Remote Meetings:

1. Log in or call in at least 5 minutes before scheduled start of meeting.
2. For the audio portion, use either your phone or your computer microphone, not both.
3. Mute your phone or computer mic unless speaking. Remember to un-mute if you want to speak. To mute or unmute in Google Meet, click on the little microphone icon at the bottom of the screen; note you may need to move your mouse pointer around the bottom of your screen to get the bottom bar to appear.
4. Speak up if using a computer microphone or if using the speaker function on your telephone.
5. Do not rustle papers in front of your mic unless it's muted. Please minimize background noise.
6. If you're referring to a document, identify it including page or sheet number.
7. If using the video function, have a light source in front of you if possible. Try to avoid backlighting.
8. If you want to look good, have your camera mounted at eye level or above. Look at yourself on screen to check the lighting, camera position, what's in the background, etc. In Google Meet, you can do this "video check" when you open the program before you join the meeting.
9. If you are participating by audio only, identify yourself when speaking.
10. ALL votes will be by roll call.
11. After the meeting is adjourned, click on the red phone icon on the bottom bar to leave the meeting, or (obviously) just hang up the phone if that is how you are participating.

For detailed instructions on using Google Meet, please refer to their website:

support.google.com/a/users/answer/9282720?hl=en

	<p align="center">Drumlin Environmental, LLC <i>Hydrogeologic and Engineering Consultants</i></p> <p align="center">Soil Metrics, LLC</p>	
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MEMORANDUM

To: Paula Scott & Hampden Environmental Trust
From: Matt Reynolds & Steve Rabasca
Date: July 12, 2021
Subject: Pine Tree Landfill –Post-Closure Monitoring Review & Update

This memorandum has been prepared to provide the Town with an overview of conditions at the Pine Tree Landfill (PTL) as summarized in the 2020 Annual Report and April 2021 Water Quality Data Results letter prepared by New England Waste Services of ME (NEWSME) and their engineer Sevee & Maher Engineers, Inc. (SME).

Figure 1-1 from Attachment C of the 2020 Annual Report (prepared by SME) is attached to this memorandum for reference and shows the configuration of the landfill and location of the monitoring points and other site features. Consistent with previous update memoranda, this update does not include detailed graphs and figures, however, we would be glad to prepare these if it would assist the Town and/or address specific questions.

I. Review of Landfill Closure Status

The Pine Tree Landfill consists of multiple waste disposal cells constructed through time. The original landfill, referred to as the Conventional Landfill, was an unlined waste disposal area that occupied approximately 19.8 acres in an abandoned gravel pit. Secure I was a clay-lined 1.6-acre landfill located in the northwest corner of the Conventional Landfill. Secure II was an 8.7-acre clay-lined landfill located to the north of the Conventional and Secure I landfills. Secure III was constructed in multiple phases between 1991 and 2010 and covers the Conventional, Secure I and Secure II landfills. Secure III was designed with double liner systems, leak detection and leachate collection.

PTL completed closure of the Secure III landfill in 2010 in accordance with the October 2006 Schedule of Compliance agreed to by the Maine Department of Environmental Protection (MDEP) and the Town of Hampden. The Schedule of Compliance included a requirement to implement corrective actions and to monitor water quality, gas, settlement, etc. for a 30-year post-closure period in accordance with the Environmental Monitoring Plan (EMP) for the site. Water quality monitoring conducted during 2016 to 2020 (years 6 to 10 of the 30-year post-closure monitoring period) is discussed further in Section IV below.

In 2007, NEWSME constructed a landfill Gas-to-Energy (GTE) facility on the PTL site. From 2008 through early 2021, methane collected from the landfill was directed to the

GTE where it was used for fuel to run turbines that generated electricity. Over time, the concentration of methane in the landfill gas has diminished, which is an anticipated phenomenon. In 2021, PTL ended use of the GTE due to the reduction in methane content in the landfill gas and the economics of operating the GTE. After shutting down the GTE, gas generated by the landfill is burned by flaring. Prior to shutting down the GTE, PTL applied for and received a modified air emissions license from the MDEP for the site.

II. Corrective Action Summary

Prior to closure, corrective actions systems were implemented to control and/or mitigate impacts to groundwater and surface water. These include the following.

- Gas collection systems were installed in the Conventional Landfill and Secure Landfills to collect a portion of the landfill gas generated by decomposition of waste. As noted above, both gas collection systems were connected to the GTE plant and are now connected to flares.
- The Secure III landfill liner system functions as a cover for the Conventional Landfill and the cover system for the Secure III Landfills was completed in 2010;
- The perimeter drain (PDPS) borders the west, south and east sides of the Conventional Landfill and intercepts and collects some shallow groundwater;
- Six groundwater extraction wells have been installed near the edge of the landfill (shown as red symbols on Figure 1-1). Wells EW-2R and EW-3R are located adjacent to the southeast corner of the landfill. Wells EW-5R, EW-6R, EW-101 and EW-102 are located adjacent to the northeast corner of the landfill. The volume of leachate and groundwater extracted by these wells and the PDPS during 2013 to 2020 are summarized below.

Year	Northeast (EW-5R, -6R, -101, - 102)	South (EW-2R, -3R)	PDPS	Total (gallons)
2013	2,687,000	1,121,000	3,721,000	7,529,000
2014	1,857,000	506,000	3,802,000	6,165,000
2015	3,112,039	781,344	3,356,269	7,249,652
2016	2,328,767	475,324	2,705,609	5,509,700
2017	1,429,545	155,070	3,056,334	4,640,949
2018	1,771,445	265,776	4,097,318	6,134,539
2019	834,552	5	4,189,334	5,023,891
2020	2,291,583	818,824	3,811,390	6,921,797

During 2018, PTL had increased the total pumping after several years of lower pumping. During 2019, pumping from multiple extraction wells was lower while repairs were made. This allowed the pumping rates to be increased in 2020 back closer to the rates that had been achieved in 2013 and 2015. In the 2019 Annual Report, SME had recommended that extraction well pumping rated be increased to volumes consistent with the rates pumped during the early 2010s. In the 2020 Annual Report SME notes that *“optimizing groundwater extraction”* from the extraction wells *“will play a key role in achieving the PTL on-site threshold criteria”*.

- PTL also collects gas migrating away from the landfill in collection wells located west and south of the landfill. This external landfill gas (LFG) collection system consists of 6 gas collection wells (shown as blue symbols on Figure 1-1) and a passive gas collection trench. The gas extracted from the collection wells during 2013 to 2020 is summarized below.

Year	PTGW08-1 (MMSCF/Tons)	PTGW08-11 (MMSCF/Tons)	PTGW08-12 (MMSCF/Tons)	PTGW08-13 (MMSCF/Tons)
2013	20.8/218	2.0/17	0.5/2	0.6/4
2014	19.7/220	2.6/22	0.1/0.3	0.4/6
2015	19.2/200	2.5/19	2.1/10	1.7/8
2016	13.9/144	2.8/18	1.1/2.6	0.1/0.2
2017	8.6/101	3.5/23	1.8/12	0.2/0.1
2018	12.6/138	7.1/49	5.5/33	3.7/17
2019	14.0/143	1.3/7	3.2/13	0.8/4
2020	11.7/126	0.6/4	1.8/8	1.4/3

Notes: 1. MMSCF = Million Standard Cubic Feet. Tons = Tons of Methane Extracted

2. Estimate of Tons is Based on Volume Extracted and Percent Methane

3. No Gas Was Extracted from PTGW08-3, -9 during 2013 to 2020 Due to Low Gas & Methane

Gas is generated in the landfill as organic materials decompose. As time passes, percentage of methane within the gas has decreased, as expected. This decrease is likely to vary depending on the type of waste in different areas of the landfill.

Comparison 2013 and 2020 data show that methane in the landfill gas extracted at PTGW08-11 has decreased from 41% to 29% and at RTGW08-13 has decreased from approximately 30% to approximately 10%. In contrast, the methane percentage has remained fairly stable in PTGW08-1 (~ 51%) and PTGW08-12 (~20%).

The gas extraction in well PTGW08-1 increased in 2019 compared to 2017 and 2018, but decreased in 2020. Despite the lower rate of gas extraction in PTGW08-1 in recent years, there has not been a trend of increasing methane concentration in MW-916 or MW-197 east of the landfill. Methane concentrations to the southwest of the landfill (near PTGW08-12 and -13) have been variable.

III. Water Quality Target Criteria

The MDEP Closure Order identified 5 specific criteria for determining “successful corrective action” at PTL under the MDEP Solid Waste Regulations. These criteria incorporate the state Maximum Exposure Guideline (MEG) values and the federal Maximum Contaminant Level (MCL) and Ambient Water Quality Criteria (AWQC) values.

The five criteria are as follows.

- Groundwater Quality on the PTL Property:
 - Specific Conductance must be less than 500 umhos/cm
- Groundwater Quality off of the PTL Property:
 - Groundwater must be below the applicable MCLs and MEGs;
 - Specific Conductance must be less than 400 umhos/cm
 - Dissolved Methane must be below 700 ug/L
- Surface Water Quality:
 - Surface water quality must meet the federal AWQC and Maine water quality classification established in 38 MRSA Section 465 and 465-B.

These criteria must be met at the PTL monitoring locations before the end of the 30-year post-closure period for the MDEP to determine that corrective actions have been successful. The 30-year post-closure period began in 2011, so 2020 represents year 10 of 30. Tracking data against these criteria allows PTL, the MDEP and the Town to judge whether the existing corrective actions have the potential to be sufficient to meet these criteria over time, or whether supplemental corrective actions may be necessary in the future.

IV. Water Quality Overview

In accordance with the Post-Closure Environmental Monitoring Plan, water quality is currently monitored two times each year at a network of sampling locations around PTL. These monitoring points are located in different regions around the landfill and include groundwater monitoring wells, residential wells and surface water. Table 1 summarizes the current sampling regime, specific conductance range and water quality trends for the data from 2014 through April 2021. The attached Figure 1-1 shows the location of the monitoring wells discussed below.

Table 1
PTL 2014 to April 2021 Water Quality Monitoring Summary

Monitoring Pt ³	2016-2020 Analysis ¹ (Frequency/yr)	Specific Cond. Range ² (umhos/cm)	Predominant Specific Cond. Or TDS 5-Year Trend
South/Southwest			
200*	F, L (2)	347 - 691	None
641	F, L (2), M (1)	815 - 1368	None
MW-906B*	F, L (2)	338 - 513	None
MW02-801A	F, L (2), M (1)	1896 - 3530	Down
MW02-801B	F (2)	676 - 3700	None
MW03-802A	F, L (2), M (1)	470 - 845	Up
MW03-802B	F, L [^] (2), M (1)	804 - 1587	None
MW03-803A	F, L [^] (2), M (1)	1264 - 1867	Up
MW03-803B	F, L (2), M (1)	1157 - 1591	Up
West & North			
MW03-804A	F (2)	682 - 1070	None
P-914A	F, L (2)	683 - 976	Up
P-914B	F (2)	589 - 963	Up
516B-B	F, L (2)	981 - 1169	None
Northeast & East			
MW98-601A	F (2)	1672 - 2880	Down
MW96-601B	F (2)	1117 - 1730	None
MW01-602B*	F (2)	259 - 679	None
MW97-123	F, L (2)	780 - 1425	None
509A	F (2)	739 - 1234	None
509B	F, L (2)	698 - 1249	None
P-911B	F (2)	691 - 959	None
916	F, L (2), M (1)	257 - 1160	None
917	F, L (2), M (1)	354 - 1042	None
Residential			
DW04-109*	F (2), L (1), M (2)	192 - 793	None
DW-103	F (2), L (1), M (2)	355 - 485	Up
Surface Water			
SW-A	F, L (2)	85 - 180	None
SW-C	F, L (2)	66 - 200	None
SW-D	F, L (2)	197 - 890	None
SW-E	F, L (2)	241 - 1046	None

Notes: 1. Analyses: F=Field Parameters, L=Laboratory Parameters, M= Methane, L[^]= Supplemental

2. SC Range Reflects Data from 2014 to April 2021

3. Wells in **BOLD*** are close to or below Corrective Action Criteria for Specific Conductance.

4. Values in **RED** Represent a New Low or High Concentration measured in 2020 or April 2021.

Comparison of Recent Data (2014 to April 2021) to the Target Criteria

Specific Conductance.

- Prior to 2013, all on-site groundwater was above the 500 umhos/cm criteria. Since 2014, three on-site wells have begun to approach or meet the 500 umhos/cm criteria.

- MW-906B has had specific conductance below 500 umhos/cm since July 2014.
- MW-200 was below the 500 umhos/cm target criteria for 9 of the 17 sampling events since April 2014. In 2014 the specific conductance in MW-200 was below 500 in all three sampling events. Since then, this has occurred only one time per year.
- MW01-602B was below 500 umhos/cm for 9 of 17 sampling events since April 2014, including both events in 2014 and 2015.
- Groundwater at off-site well DW04-109 has been below the 400 umhos/cm specific conductance target criteria during all sampling rounds in since April 2015. Groundwater at the off-site well DW-103 had a specific conductance of 355 umhos/cm in April 2021 and has had an average annual specific conductance between 426 umhos/cm and 467 umhos/cm since 2014.
- MW-916, which is an off-site well with a specific conductance target criteria of 400 umhos/cm, was below this concentration for 7 of 8 events between October 2013 and April 2016, but has been above 400 umhos/cm since then. The specific conductance in MW-916 rose to 1160 umhos/cm in October 2018, but has decreased since then and averaged 612 umhos/cm in 2020. Well MW-917, which is also east of the landfill, experienced a specific conductance of 1042 umhos/cm in October 2018, but had an average specific conductance of 860 umhos/cm in 2020.

Methane in Off-Site Wells.

- Both off-site residential well DW-103 and DW04-109 have been below the 700 ug/L methane off-site target criterion September 2014.
- Wells MW-917 and MW-917 have also been below the 700 ug/L methane criterion since 2014.

Drinking Water Criteria (MCLs & MEGs) in Off-Site Wells.

- At the off-site residential well DW-103, the arsenic concentration was 0.011 mg/L in October 2020. This is slightly above the primary drinking water MCL and MEG for arsenic of 0.01 mg/L. Groundwater was above the secondary MCL and MEG for iron, manganese and sodium.
- At the off-site well DW04-109, arsenic was below the detection limit in October 2020. Groundwater was above the secondary MCL and MEG for iron and manganese in 2020
- At MW-916, arsenic was below the MCL and MEG in 2020. At MW-917, groundwater was above the MCL and MEG for arsenic in 2020. Secondary drinking water criteria of iron and manganese are also exceeded at MW-916 and MW-917.

Surface Water Criteria.

- Surface water meets the applicable classification criteria and AWQC standards.

Discussion of Data Trends

As shown in Table 1, over the past 5 years there has been a downward (improving) trend in specific conductance or total dissolved solids (TDS) in two of the monitoring locations (MW96-601A and MW02-801A) in the monitoring network at the PTL site. There were also new low specific concentrations measured at 10 of the 20 on-site monitoring wells in 2020 and April 2021. This improving trend has generally been gradual and at many locations, the specific conductance remains significantly above the target criteria of 500 umhos/cm.

Table 1 also shows that over the past 5 years there are upward trends in specific conductance or TDS at five locations and new high specific conductance values at five locations in 2020. The area where there has been a persistent upward trend in specific conductance has been to the southwest of landfill in wells MW03-802A and MW03-803A & B. New high specific conductance concentrations were measured in the 802A and 803B wells in 2020. Since 2018, gas extraction at PTGW08-12 and -13, in the vicinity of the 802 and 803 wells, dropped from 33 tons of methane to 8 tons at PTGW08-12 and from 17 tons to 3 tons at PTGW08-13. In June 2016, PTL discovered leachate leaking from a cover defect onto soils in this area. This condition was repaired promptly. However, this cover repair does not appear to have been sufficient to reverse the upward trend. Based on water quality data, it is difficult to attribute the upward trend to the leachate leak that was identified and repaired in 2016 (i.e., 5 years ago). Lower rates of methane removal and other, as yet unidentified, factors are likely to contribute to this trend.

Figure 2 shows the specific conductivity data and linear trend since 2008 for three example monitoring wells at the PTL site where the 5-year trend is steady or downward. A similar graph was included in the review of the 2018 Annual Report. Since that time, the trend at wells MW02-801A and well 97-123 have remained similar. Well MW02-801A has shown a steady downward trend and if this trend continues, would reach the target criteria before 2040. Well 641 has a downward trend that has become more gradual over time. However, the current specific conductivity is low enough that slow improvement suggests that the criteria may be able to be achieved. Well 97-123 northeast of the landfill shows a more gradual downward trend that suggests the potential to remain above the Corrective Action Criteria after 30 years.

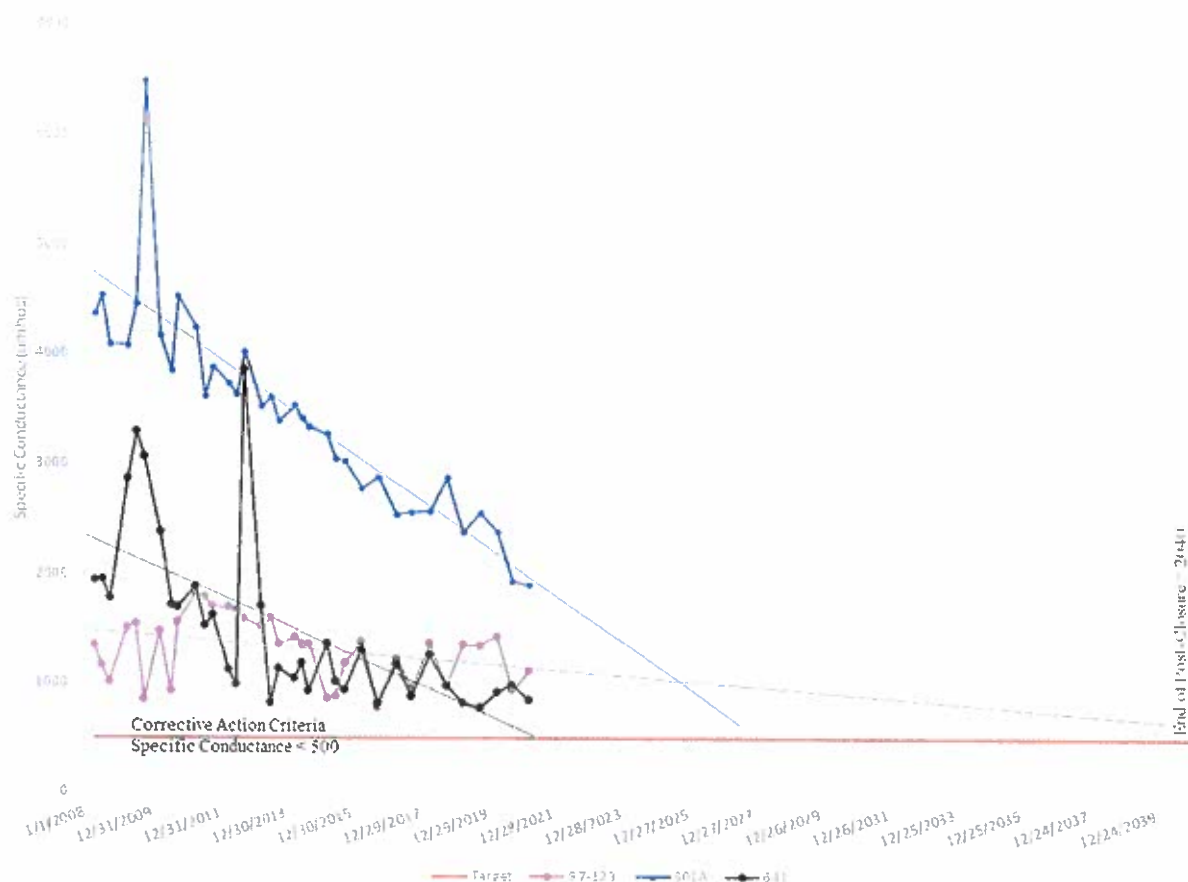


Figure 2 – Water Quality Trends

An important achievement in 2020 was to increase the pumping from the extraction wells to near their early post-closure rates. In the 2020 Annual Report, SME notes that optimizing operation of these wells will be important to reaching the corrective action target criteria. The wells in the locations shown in Figure 2 will benefit from the influence of the extraction wells.

There are also wells on the southwest and west sides of the landfill where there continues to be an upward trend, as discussed above. These wells are outside the influence of the extraction wells, so the only active corrective action measures currently acting to improve water quality at these wells is gas extraction wells PTGW08-12 and -13. Since 2018, there has been diminishing gas removal from these wells. Considering that 2020 completes 10 of the 30-year post closure period, PTL should consider additional active corrective measures to address conditions in the vicinity of the wells with persistent upward trends.

V. Geotechnical Monitoring

The geotechnical monitoring program for the landfill continued in 2020 and was summarized in a report prepared by Dr. Richard Wardwell, PE, (REW) dated March 2021. The focus of the geotechnical monitoring will shift going forward from labor

intensive surveying of foundation and surface monuments, to physical observations of the performance of the cover system. This will include periodic inspections of the vegetative layer and surveying of slopes and grades of drainage swales and internal piping system that is necessary to assure the cover system is performing as designed. The intensive monitoring of the foundation and surface monuments for the overall surface topography were suspended after the 2020 surveying event. These surveys can be reinstated in the future if observations indicate that there is unusual movement occurring, because the system of monuments will be left in-place. The specific monitoring conducted in 2020 included the following:

- Periodic observations of the landfill cover
- A terrace survey (slopes and grades of the various terraces used to convey cover surface water).
- Monitoring of the foundation waste mass stability with vertical deflection monitors (last survey August 2020)
- Monitoring of surface monuments to detect movements indicative of cover instabilities (last survey August 2020)
- Data evaluation, interpretation and reporting .

Cover System Stability and Cover Strain Monitoring: The cover system stability and strain monitoring has been monitored principally over the last decade by survey measurements of the surface and foundation monuments. The last survey conducted in August 2020 indicated that the decade long trends in the settlement show a diminishing rate of settlement. This diminishing rate is consistent with typical waste consolidation. The rate of settlement year to year has declined by over an order of magnitude since the measurements were initially performed. A typical plot of this settlement is shown on the attached Figure 4-6 from the 2021 report by REW. There have been no large anomalous drops in settlement observed over the last decade plus of monitoring. Strain rates on the liner system continue to be well below tolerable limits. The REW report recommends that the survey monitoring be discontinued based on this long-term body of data. We agree with this change in the plan. As suggested in the latest monitoring report, should site observations show areas of concern, the survey monitoring can be reestablished at any time.

Terrace Swale Survey and Monitoring: Sevee & Maher performed a terrace survey in February 2021 to monitor the grades of the many surface water drainage swales that convey surface water off the cap safely. These surveys have been on-going since 2011. The latest survey identified seven new sag areas. These sag areas are locations in the swales where surface water can pond locally. The survey data indicates that while surface water can pond locally, these sags are not deep enough to result in any surface water spilling over the tops of the swale berms and that all stormwater will remain in the trenches. The swale survey also included observations of the overall cap condition. No cover integrity issues were noted.

In summary, there were no significant issues reported related to the geotechnical performance of the landfill in this latest monitoring report.

Leachate Recirculation in 2020:

PTL continued the leachate recirculation program in 2020 at a limited rate due in part to limited staffing. The volume of recirculated leachate was 169,316 gallons in 2020 and consisted primarily of condensate from the GTE plant. This volume was lower than in 2018 and 2019, when over 350,000 gallons were recirculated, and significantly lower than in years prior to 2017, when between 2,000,000 and 6,000,000 gallons of leachate were recirculated.

Overall, the energy extracted, in the form of methane gas, from the entire landfill has decreased significantly from 263,077 million BTUs (MMBTUs) in 2010 to 70,213 MMBTUs in 2020. A decrease in energy production was anticipated as moisture in the landfill decreases following placement of the final cover and lower moisture slows the microbial activity that breaks down waste to methane. However, the energy extracted from the portion of the landfill where leachate has been recirculated has remained relatively steady, with only a small decrease between 2013 and 2020. This suggests that leachate circulation has had the intended effect of maintaining a higher moisture content and methane generation.

As noted above, the GTE plant was shut down in 2021. Associated with this shutdown, PTL has indicated that leachate recirculation will be very limited in 2021 and unlikely to continue in future years.

VI. Proposed Monitoring Changes

When the Environmental Monitoring Plan was developed in 2010 as part of the final closure process, PTL proposed phased modifications to the monitoring program. From 2011 to 2015, water quality sampling was conducted three times per year. From 2016 to 2020, water quality sampling was reduced to twice per year. PTL proposed to further reduce water quality sampling to once per year from 2021 through the remainder of the post-closure period. The MDEP determined that twice-per-year sampling should continue in 2021 and that the MDEP would review the 2020 Annual Report and consider possible modifications to the monitoring frequency. Rather than a wholesale change to once-per-year sampling, we recommend reducing the monitoring frequency to once-per-year in some wells (e.g. 906B, where the target criteria are consistently achieved), but maintaining a twice per year frequency in other wells (e.g., wells with rising trends).

PTL has also proposed to reduce the frequency of gas probe monitoring from 4 times per year to 2 times per year. Maintaining and improving the zero or negative pressure at the landfill's external gas probes is a required component of successful corrective action and important to improving water quality. In 2020, zero or negative pressure was demonstrated for approximately 52 percent of the measurements. We recommend maintaining the current monitoring frequency to assist in monitoring and management of the gas collection system.

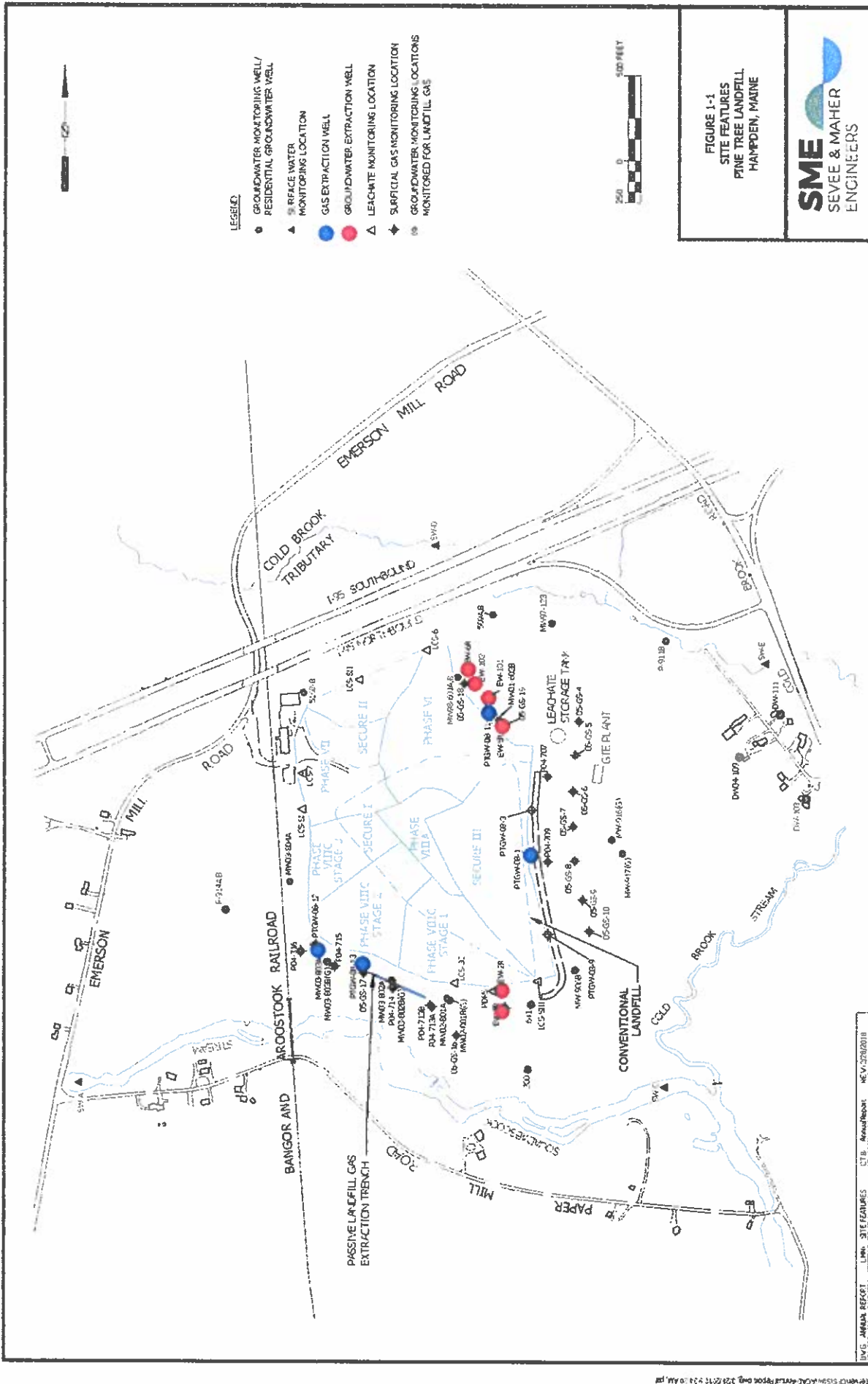
VII. Summary

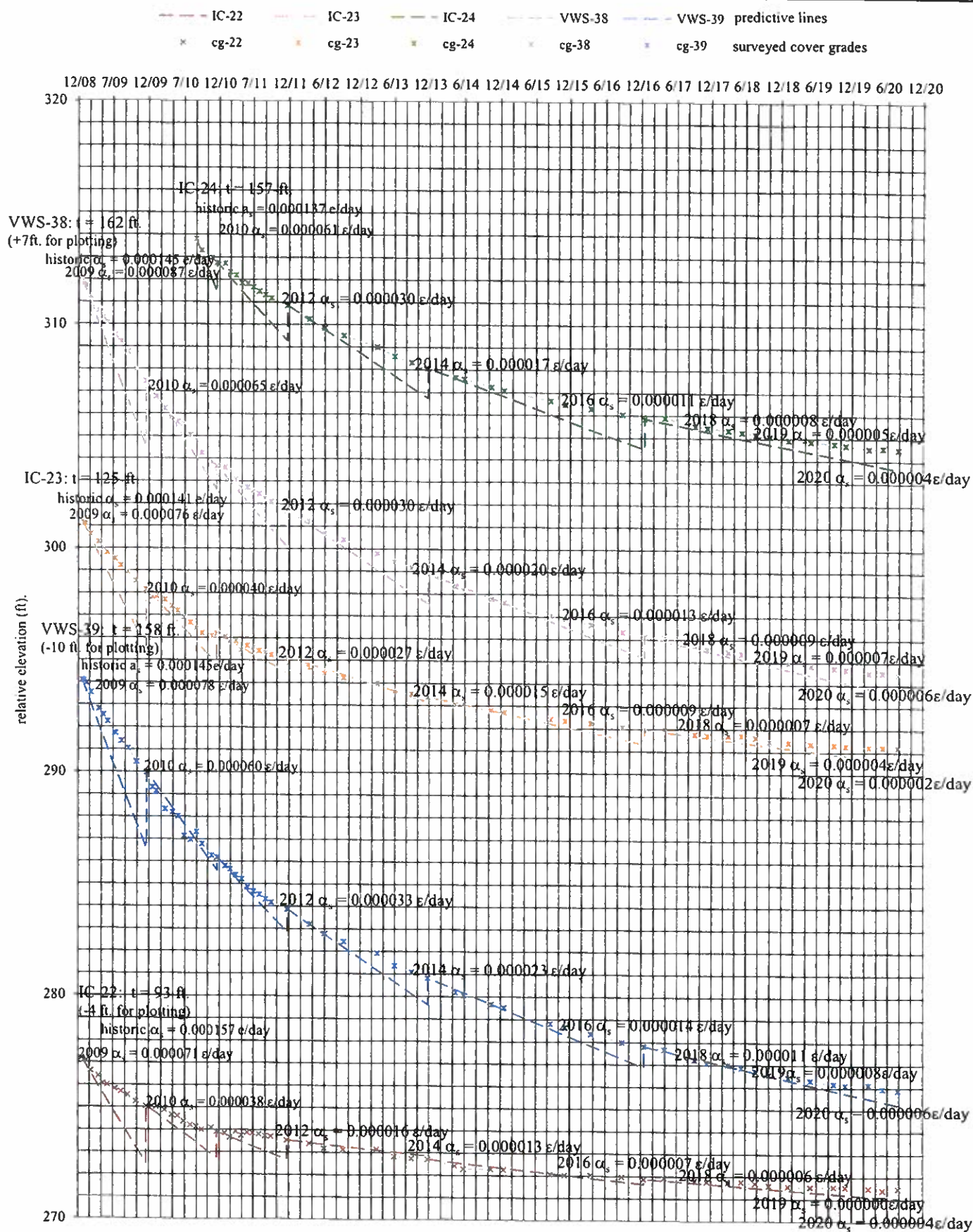
Overall, the water quality monitoring data from PTL reflected in the 2020 Annual Report and April 2021 data summary indicate that there continues to be gradual improvement at many monitoring locations. Data from 2020 represents the 10th year of the 30-year post-closure monitoring period and is not required to meet the target criteria. As has been the case for the past few years, one of the twenty-two on-site monitoring wells consistently meets the corrective action criteria and two other locations meet the criteria approximately 50 percent of the time.

Despite the improving trend in some wells, there are seven monitoring wells that continue to have significantly elevated concentrations of landfill-related compounds and a specific conductance above 1000 umhos/cm. Additionally, groundwater in several wells southwest of the landfill continue to exhibit increasing concentration trends. Repairs made to the cover system in this area and a reduction in leachate recirculation has not reversed the rising trend in these wells. This suggests that the cover defect detected and repaired in 2016 is unlikely to be the sole source of impact in this area and PTL should begin the process of identifying, designing and implementing additional corrective actions in this area.

There was a significant increase in the pumping rates at the existing extraction wells at PTL during 2020. In the 2020 Annual Report SME noted, and we would agree, that diligent operation and optimization of the groundwater extraction system will be critical in improving water quality in the areas of influence of these extraction wells.

We hope that the information summarized in this memorandum is helpful to the Town. We would be glad to discuss any questions or comments that the Town may have.





Richard E. Wardwell, P.E., Ph.D.
 19 Old Lake Rd, PO Box 169
 Lake George, NY 12845

Project: 2020
 Geotechnical Monitoring Report

Title: Phase VIII-C/Stage 3
 Post-Closure Grades

By: REW
 Checked: REW
 Date: Mar-21

Client: Pine Tree Landfill, Hampden, ME

Proj. No: 1750 Scale: as noted

Fig. No: 4-6

PINE TREE LANDFILL UPDATE

HAMPDEN TOWN COUNCIL

July 19, 2021

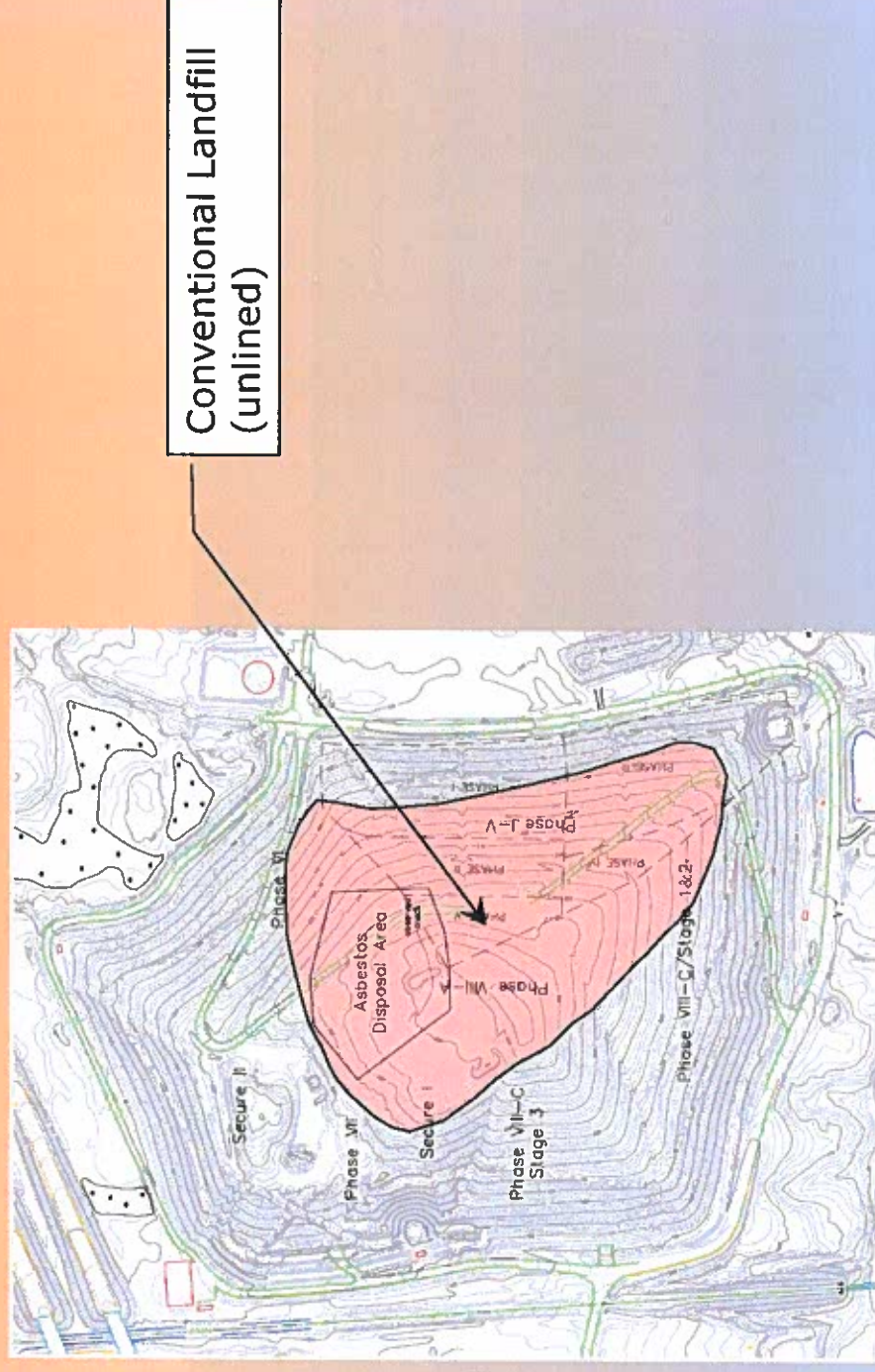
OVERVIEW OF PRESENTATION:

- Review of Landfill Construction and Closure Status
 - Review of Construction History
 - Geotechnical Monitoring – Slopes and Settlement
 - Leachate Recirculation
- Corrective Actions
 - Corrective Action Components
 - “Successful Corrective Action” Criteria
 - Pathways of Migration from Landfill
- Water Quality Assessment
 - Recent Water Quality Results
 - Trends in Water Quality
 - Future Monitoring

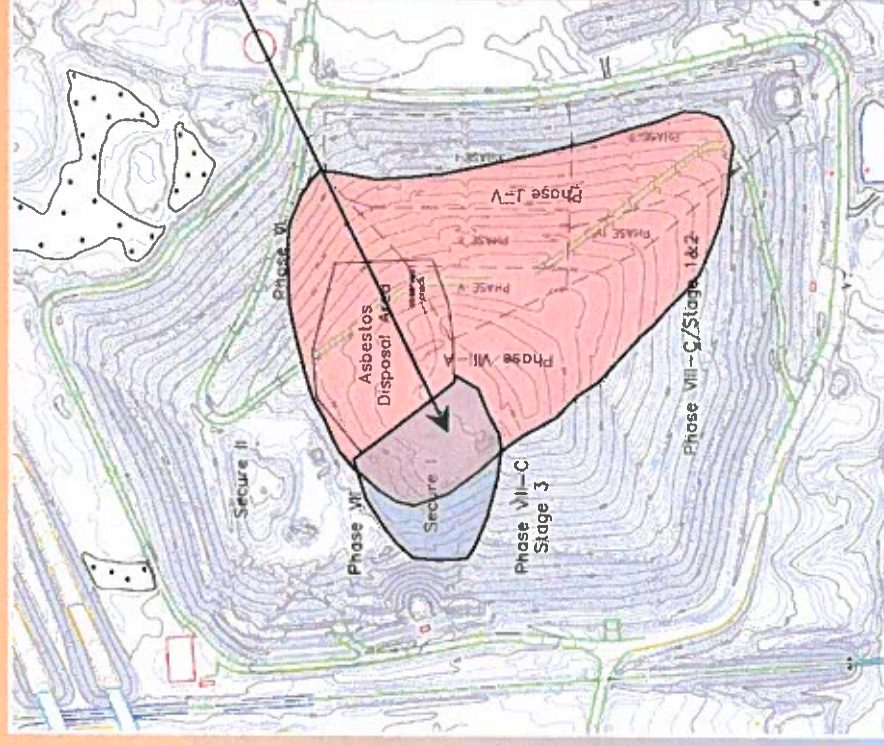
Landfill Development History

- Waste Disposal began in the early 1970's (site formerly know as the Sawyer Environmental Recovery Facility)
 - The Original **CONVENTIONAL** Landfill was unlined
 - Later increased to include:
 - An Asbestos Disposal area
 - Secure I and Secure II Landfills.
- 1992 - 2010: Expanded to Secure III: Phases I through V, and later Phases VI through VIII.

Landfill Development History



Landfill Development History



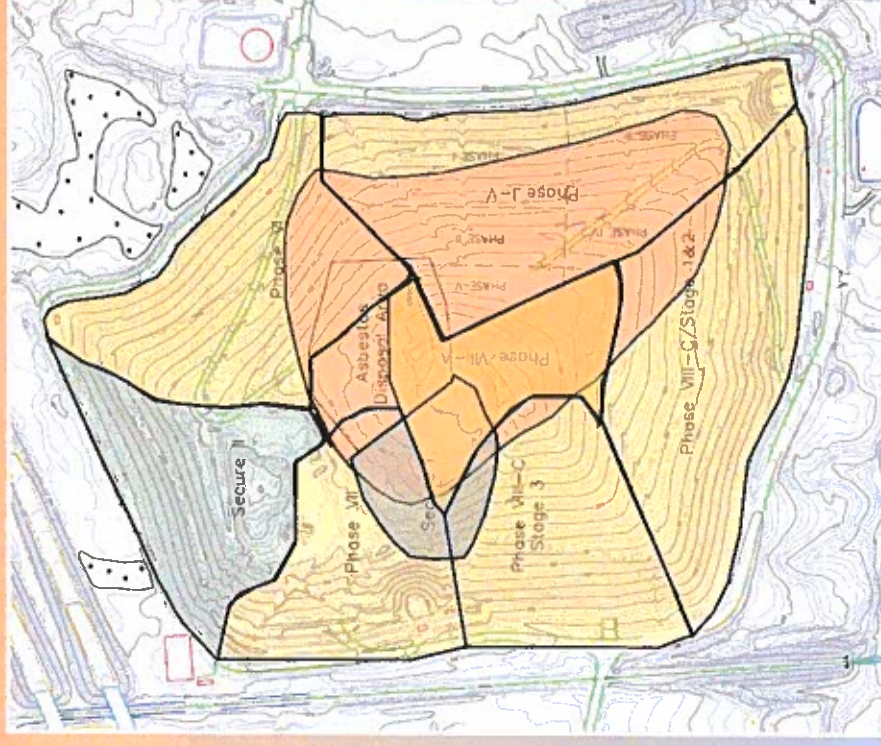
Secure I added (clay lined)

Landfill Development History



Secure II Added (clay-lined)

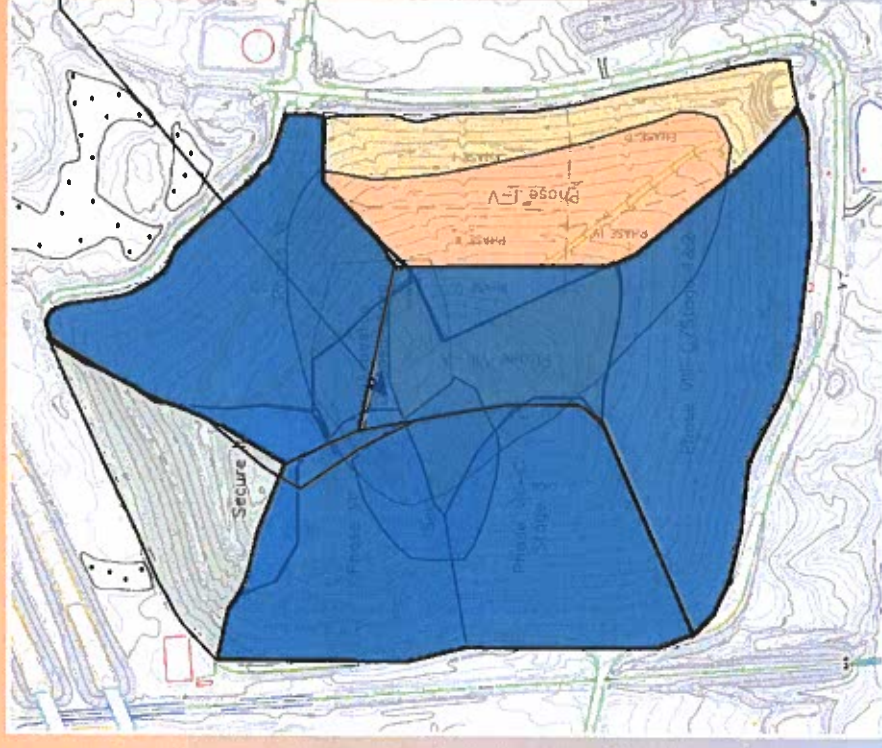
Landfill Development History



Secure III permitted in 1992

- Included a series of landfill cells constructed around the perimeter of the conventional landfill.
- The cells were constructed up and over (piggybacked on) the Conventional Landfill,
- Includes double liner with leachate collection & leak detection systems.

Landfill Closure Completed in 2010



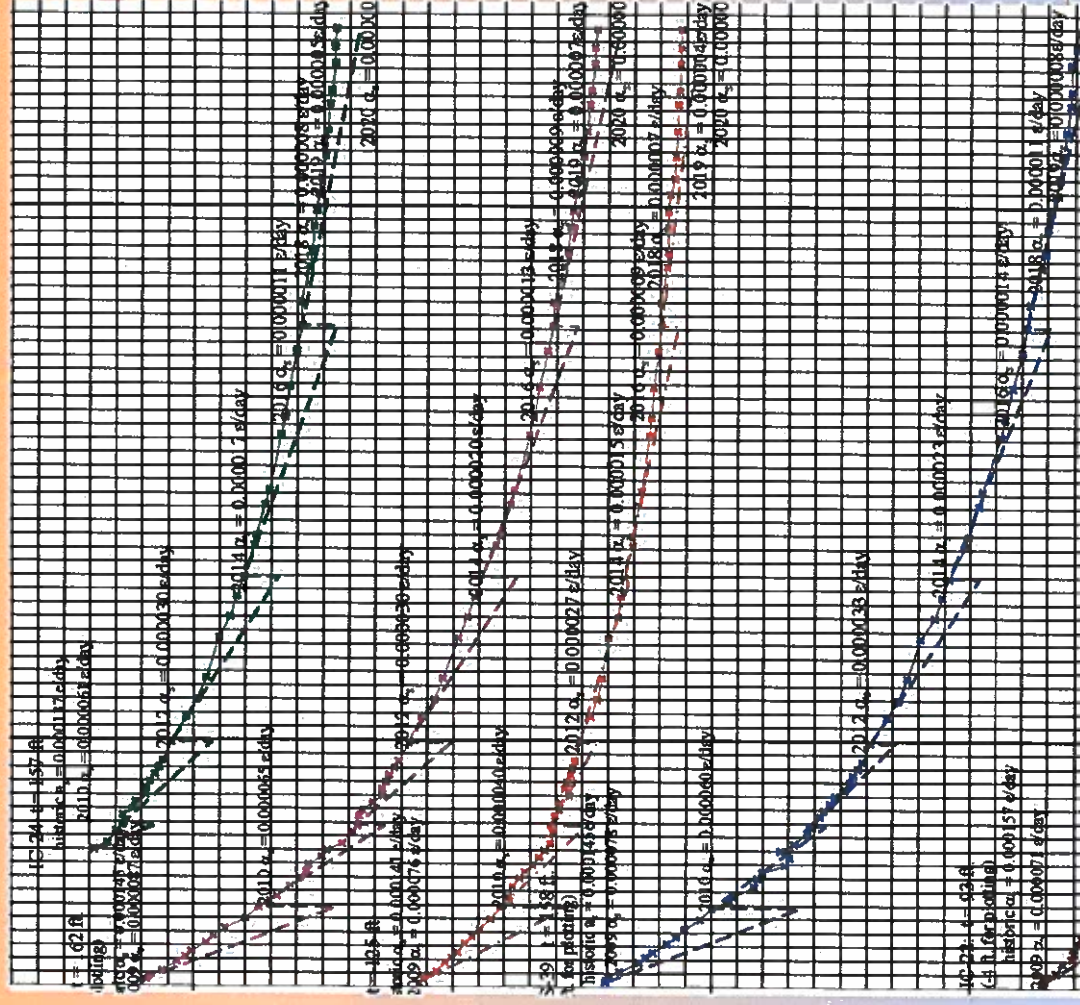
Closed in three Phases from 2008 through 2010 (Top Elevation 320 feet)

Secure II and Secure III
Phases I to V Closure Prior to 2006

2006: Closure Agreement
Between Casella, Maine DEP &
Town of Hampden

Closure = Final Grading and
Cover Construction

Geotechnical Monitoring:



Movement of Underlying Foundation Soils:

- Stable

Settlement of Cover (Rate & Differential):

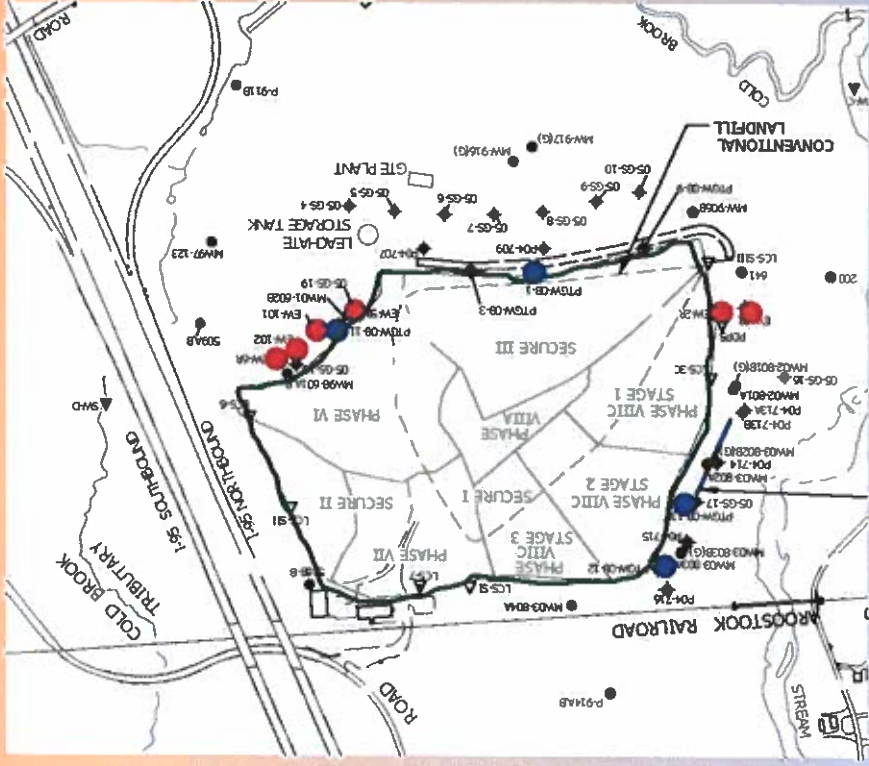
- Settlement Rate is Declining and Consistent with Design Analysis
- No Significant Differential Settlement

Leachate Recirculation



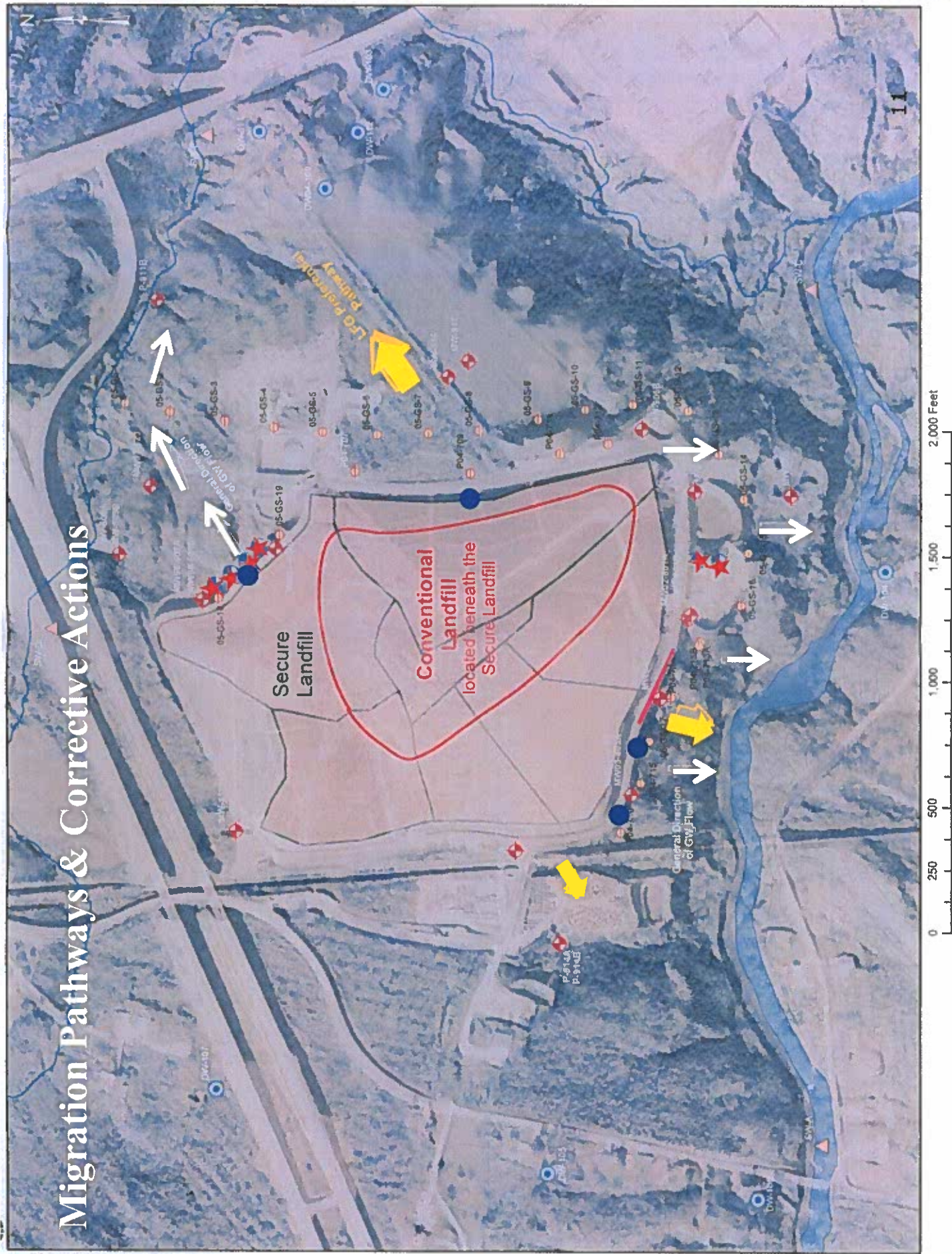
- 2009: Leachate Recirculation Pilot Begun to Increase Methane Production for Gas to Energy (GTE) Plant
- 2011: Approved Full-Scale in 2011.
2012: 5.8 Million Gallons Added
- 2016: Leachate Found Along South Edge of Landfill. PTL Stopped Using LRT-1 & 4
- 2020: 169,316 Gallons Recirculated
- 2021: GTE Closed.
- **Minimal Recirculation In Future**

Corrective Actions to



- Cover System
- Gas Extraction Wells through the Waste
- Perimeter Drain around the Conventional Landfill
- Extraction Wells Outside NE & S Sides of Secure III Landfill
- Gas Extraction Outside Secure III Landfill

Migration Pathways & Corrective Actions

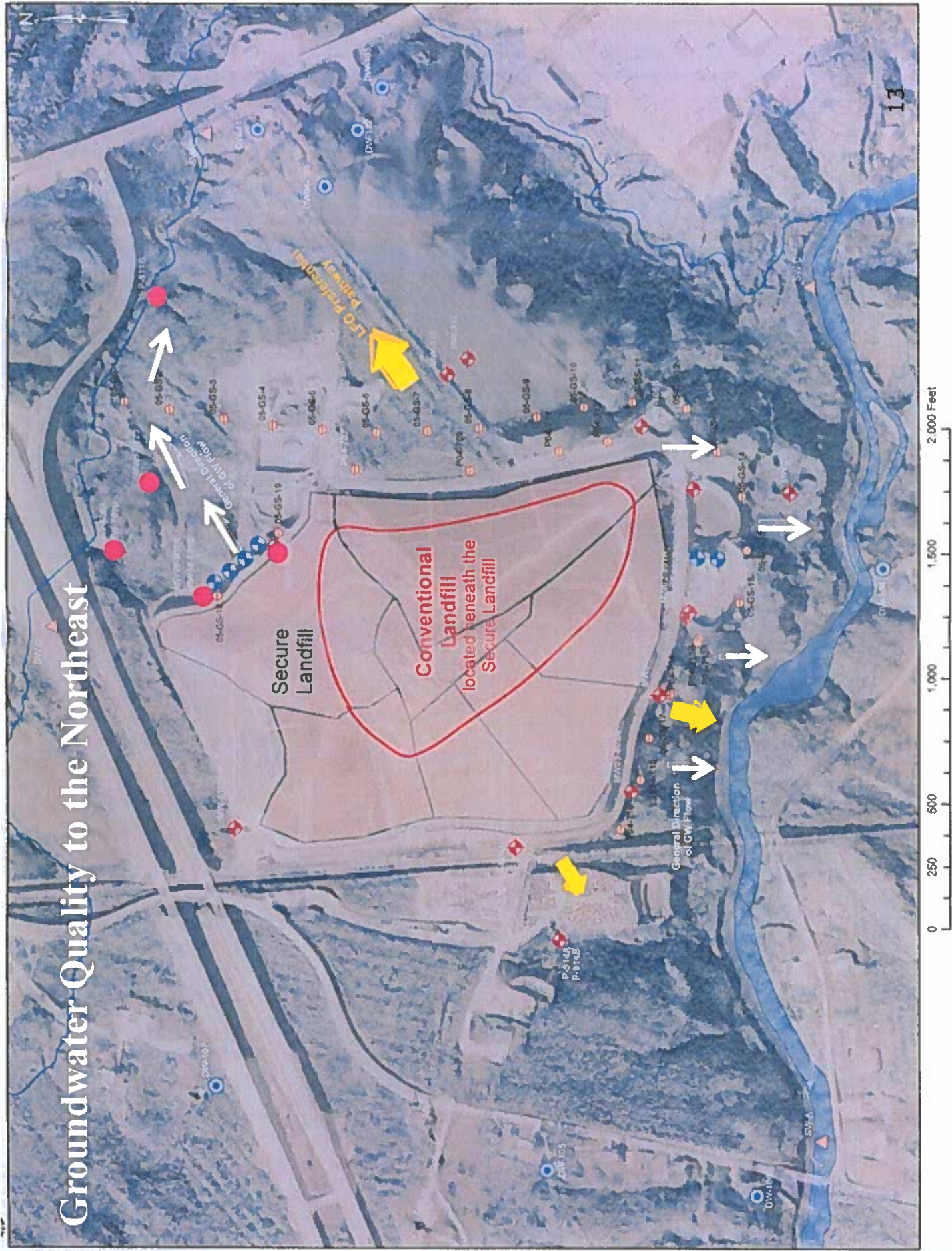


Water Quality Corrective Action Criteria

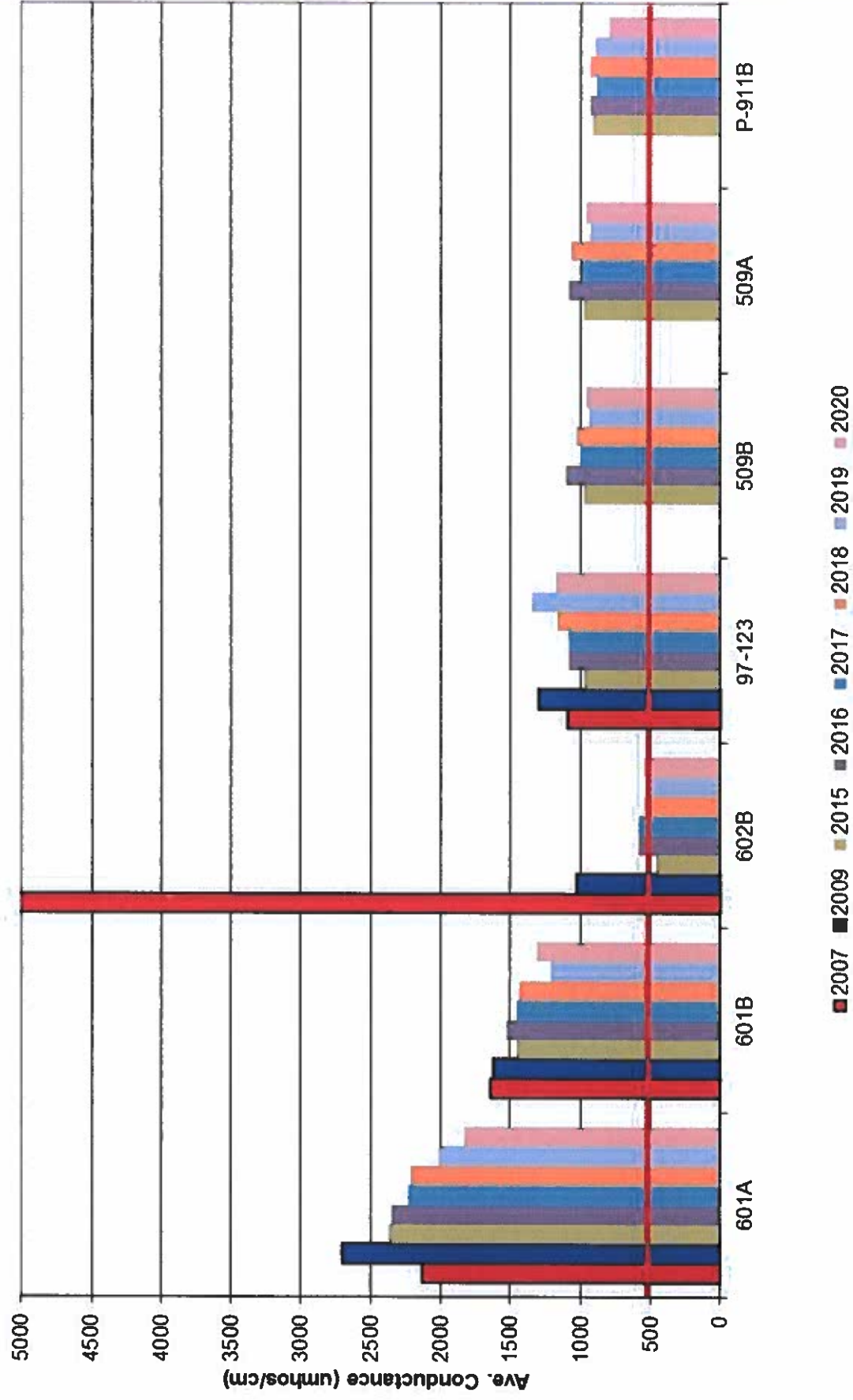
Post-Closure Water Quality Criteria for “Successful Corrective Action”

- Maintain Zero or Negative Pressure at External Gas Monitoring Points
- Groundwater On-Site:
 - Specific Conductance < 500 umhos/cm
- Groundwater Off of PTL Property:
 - Groundwater Meets MCL & MEG Values
 - Specific Conductance < 400 umhos/cm
 - Methane < 700 ug/L
- Surface Water Quality
 - Must Meet Existing Water Quality Classification Criteria

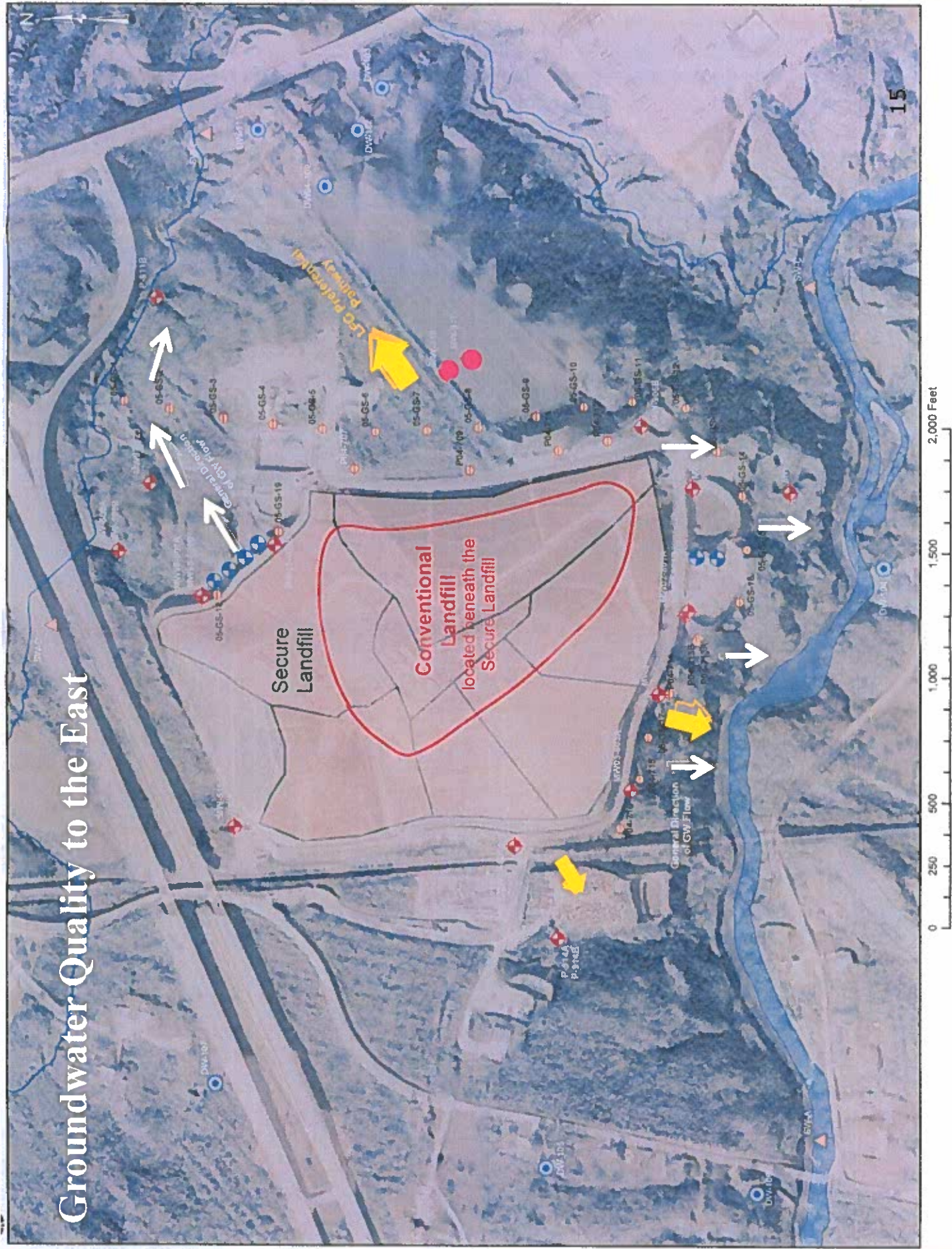
Groundwater Quality to the Northeast



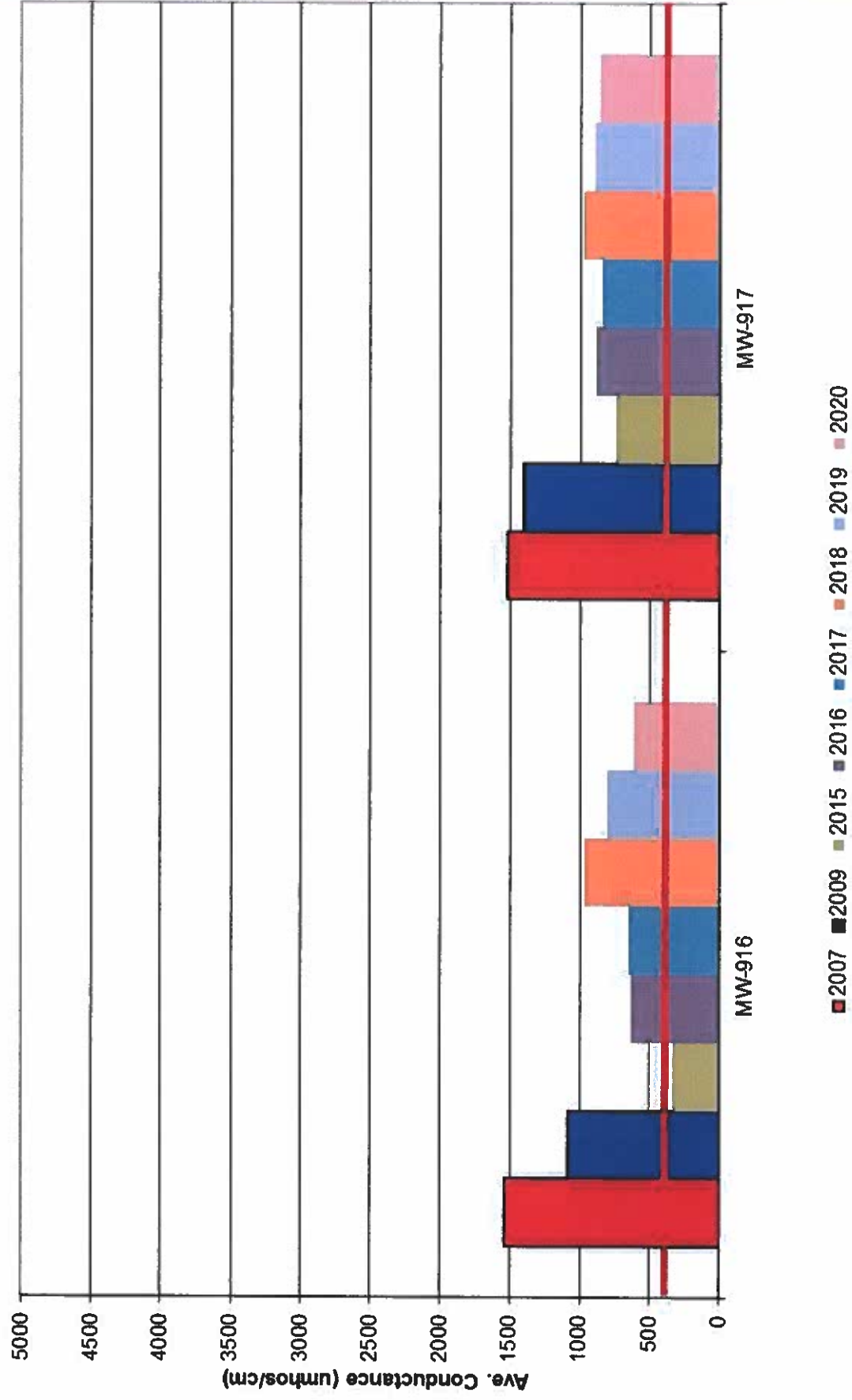
Specific Conductance Data- 2007 - 2009 - 2015 to 2020 Northeast Groundwater Flow Pathway



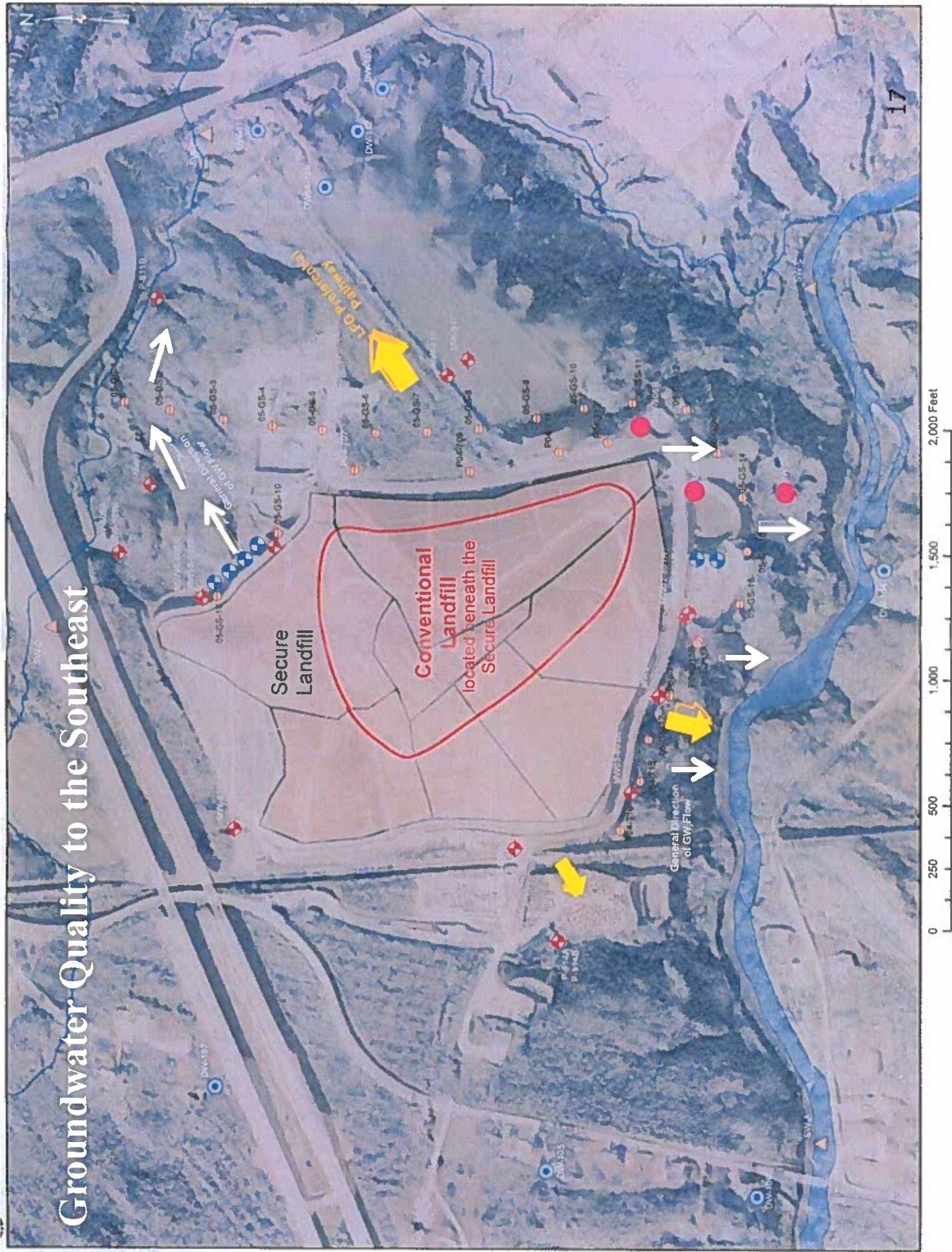
Groundwater Quality to the East



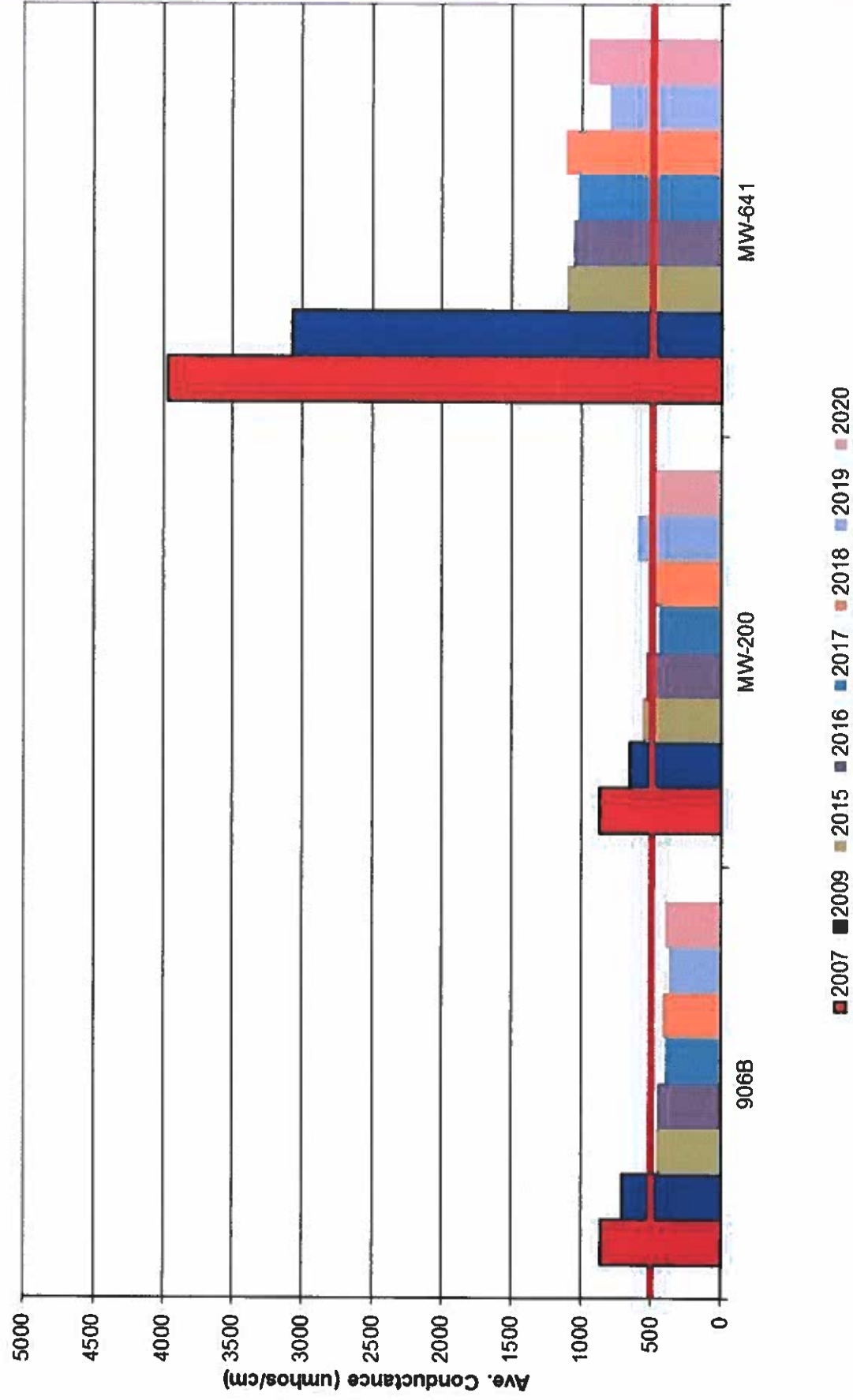
Specific Conductance Data- 2007 - 2009 - 2015 to 2020
Eastern Gas Migration Flow Pathway



Groundwater Quality to the Southeast



Specific Conductance Data- 2007 - 2009 - 2015 to 2020
Southeast Groundwater Flow Pathway



Groundwater Quality to the South

Y-12 Main Drainage Ditch

Conventional Landfill located beneath the Secure Landfill

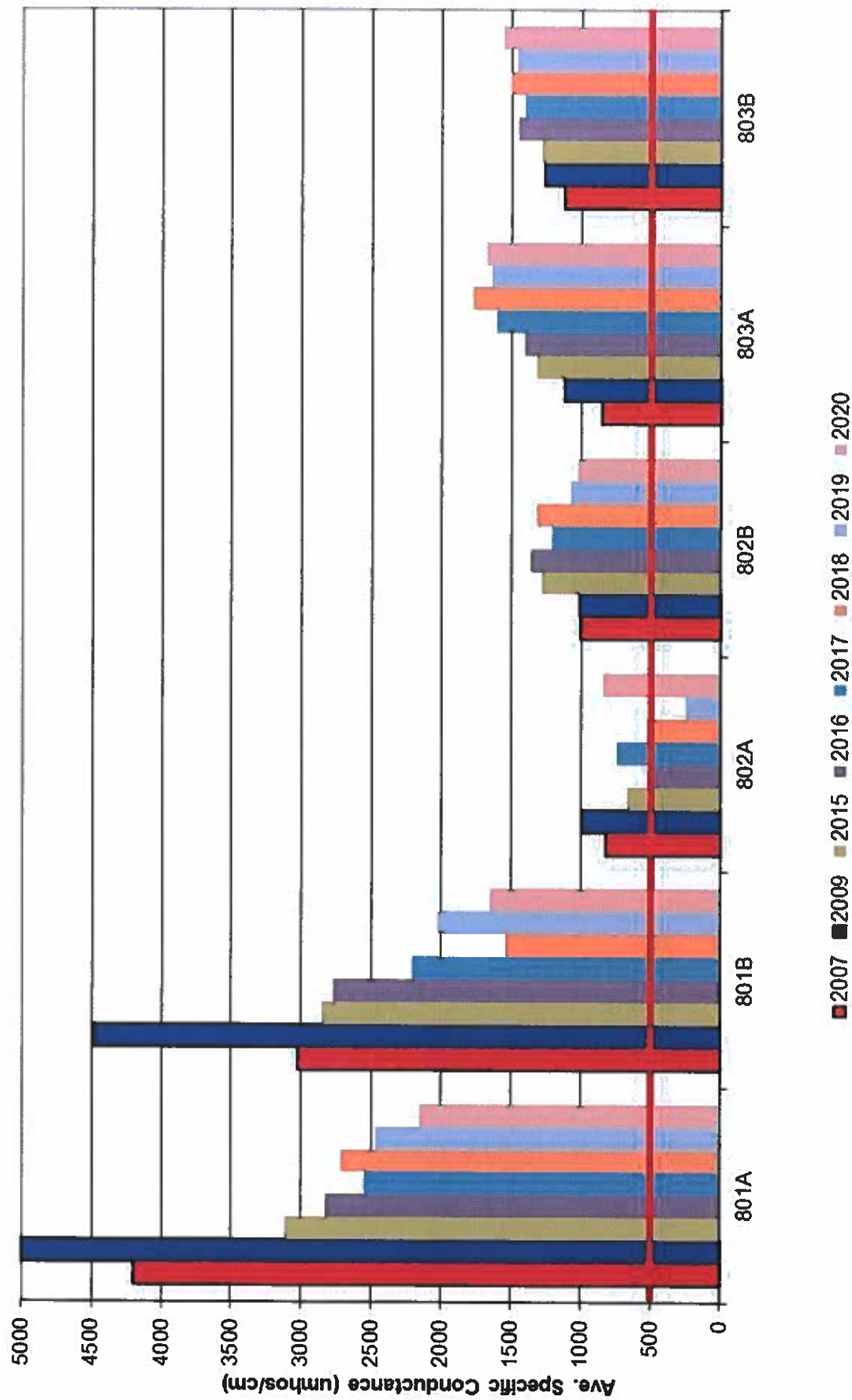
General Direction of GWF Flow

05-GS-1, 05-GS-2, 05-GS-3, 05-GS-4, 05-GS-5, 05-GS-6, 05-GS-7, 05-GS-8, 05-GS-9, 05-GS-10, 05-GS-11

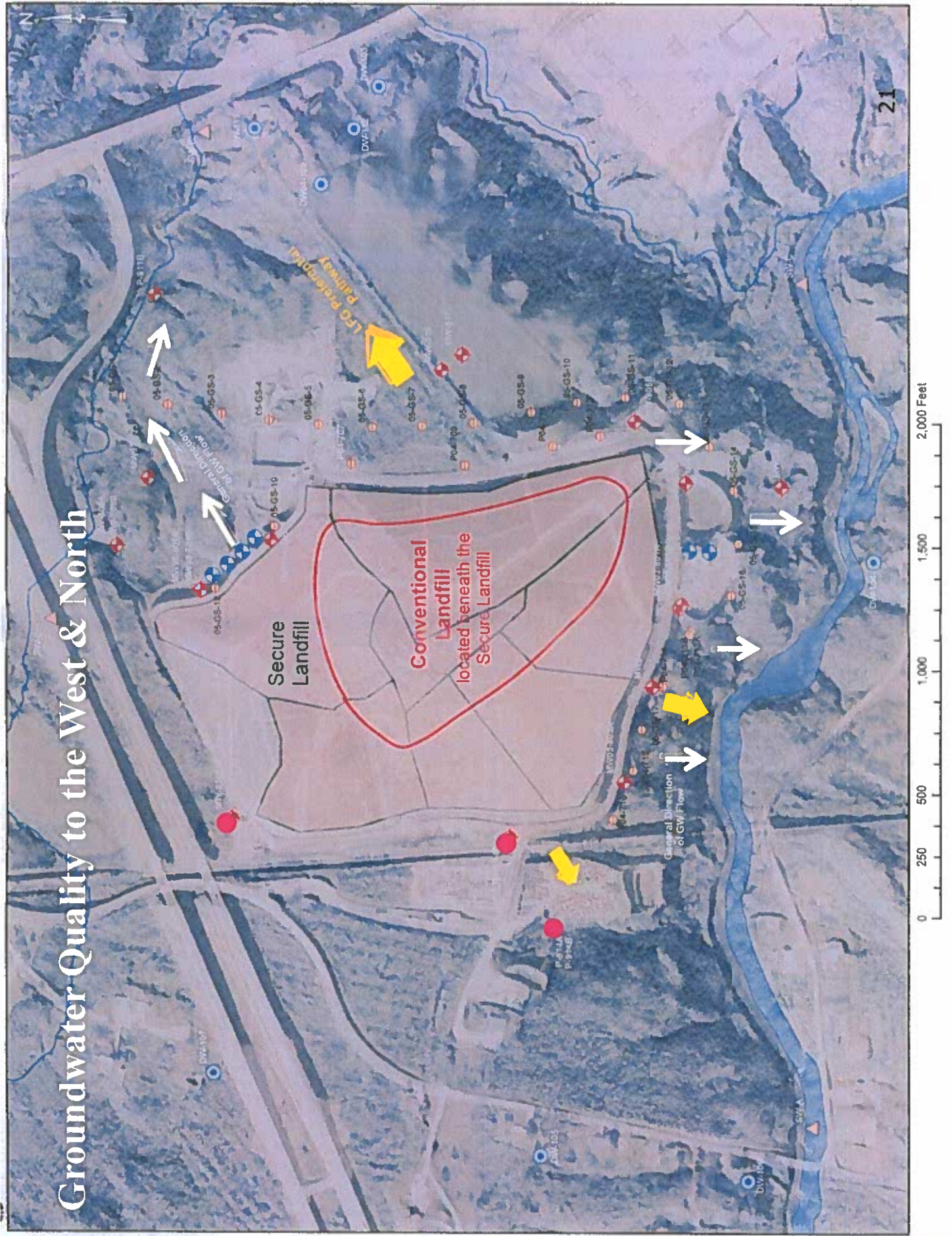
19



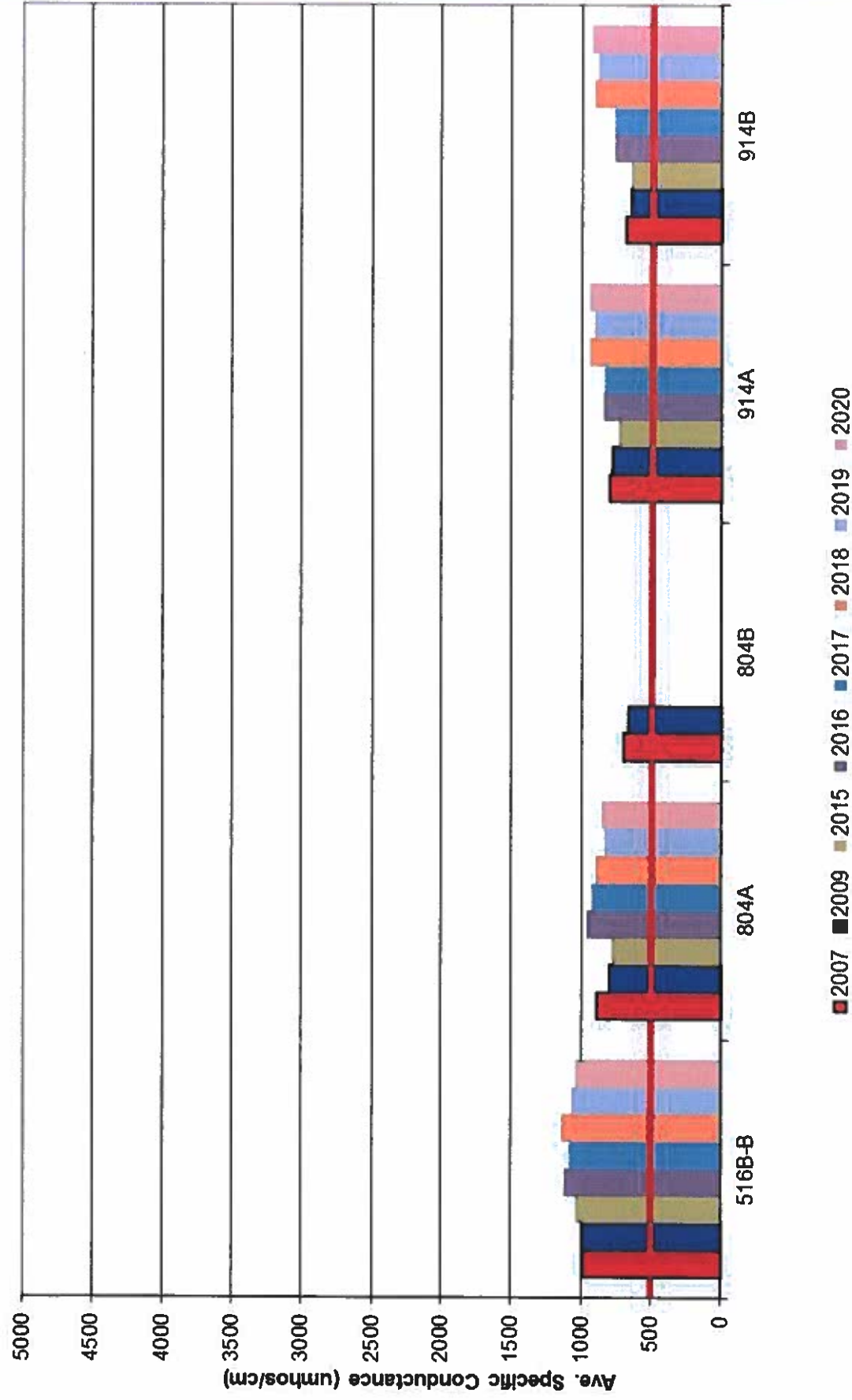
Specific Conductance Data- 2007 - 2009 - 2015 to 2020
South Groundwater & Gas Migration Pathway



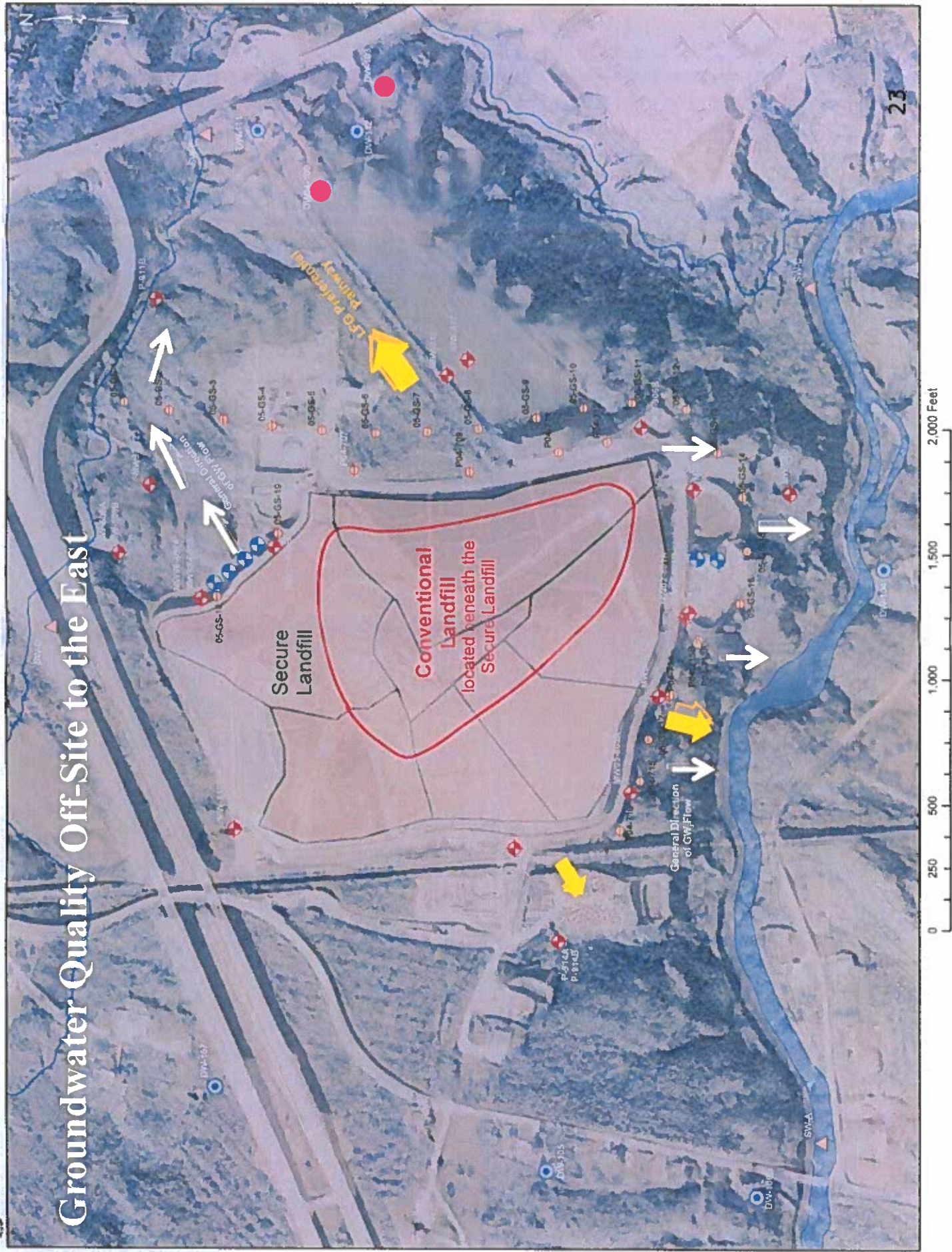
Groundwater Quality to the West & North



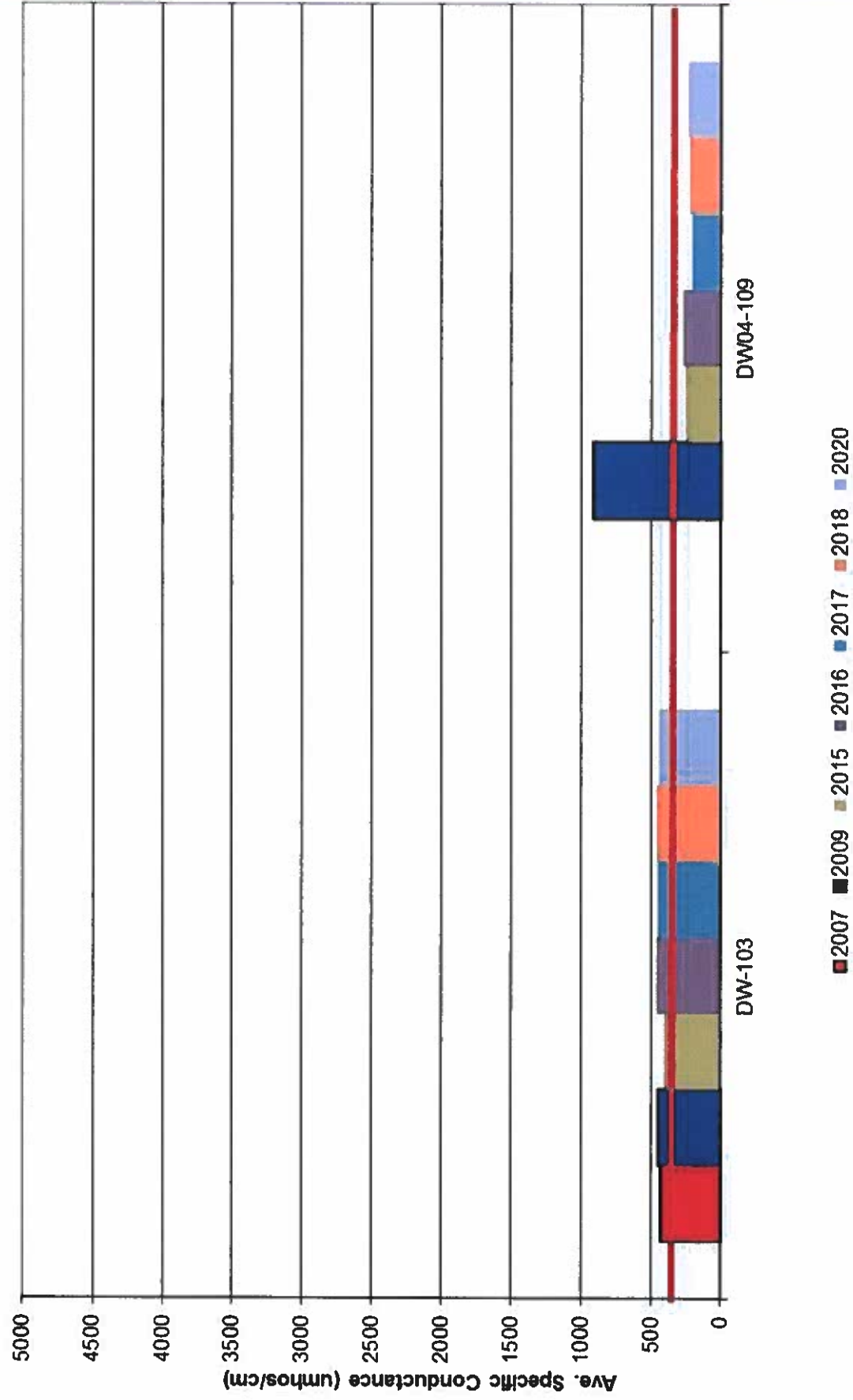
Specific Conductance Data- 2007 - 2009 - 2015 to 2020 West Gas Migration Pathway



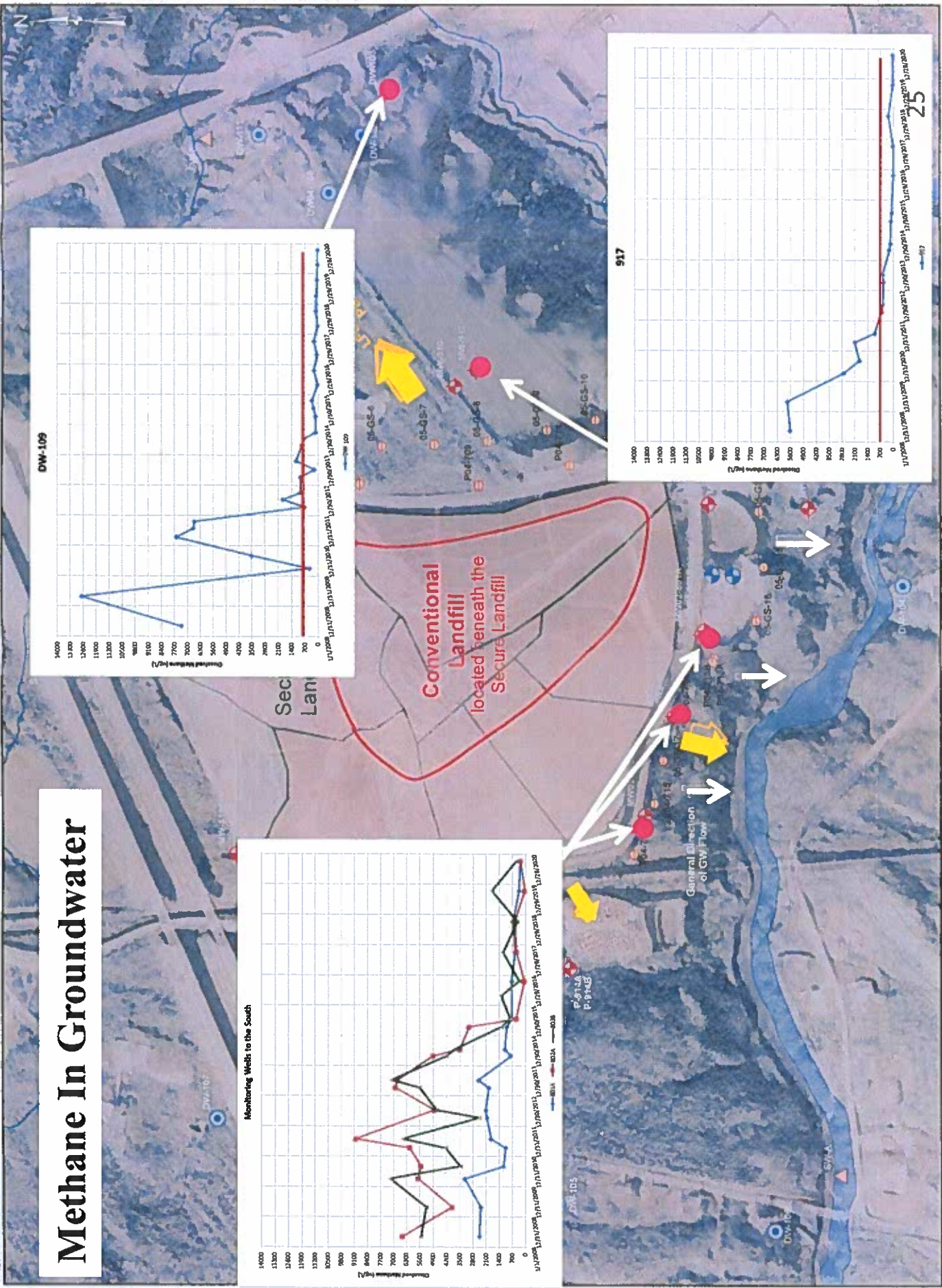
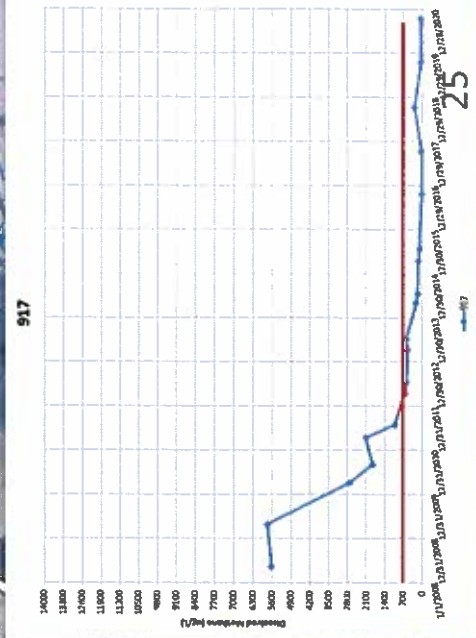
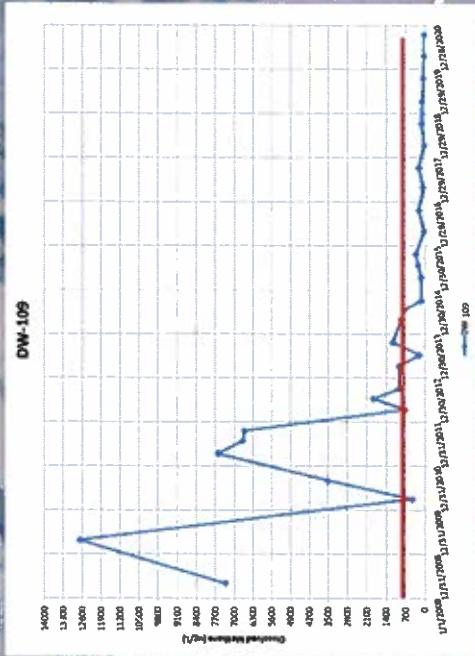
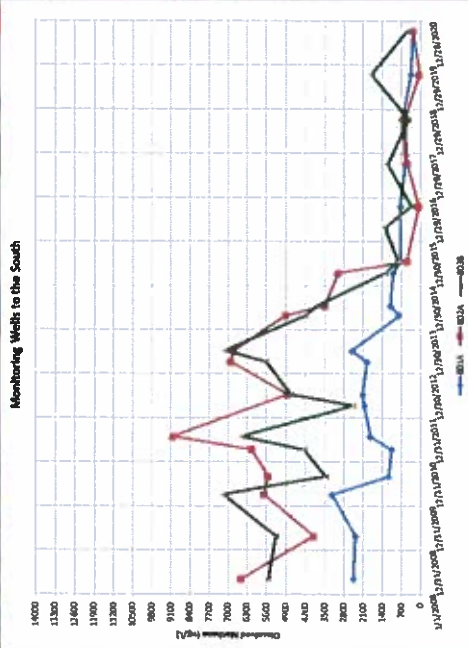
Groundwater-Quality Off-Site to the East



Specific Conductance Data- 2007 - 2009 - 2015 to 2020 Off-Site Residentail to the East



Methane In Groundwater

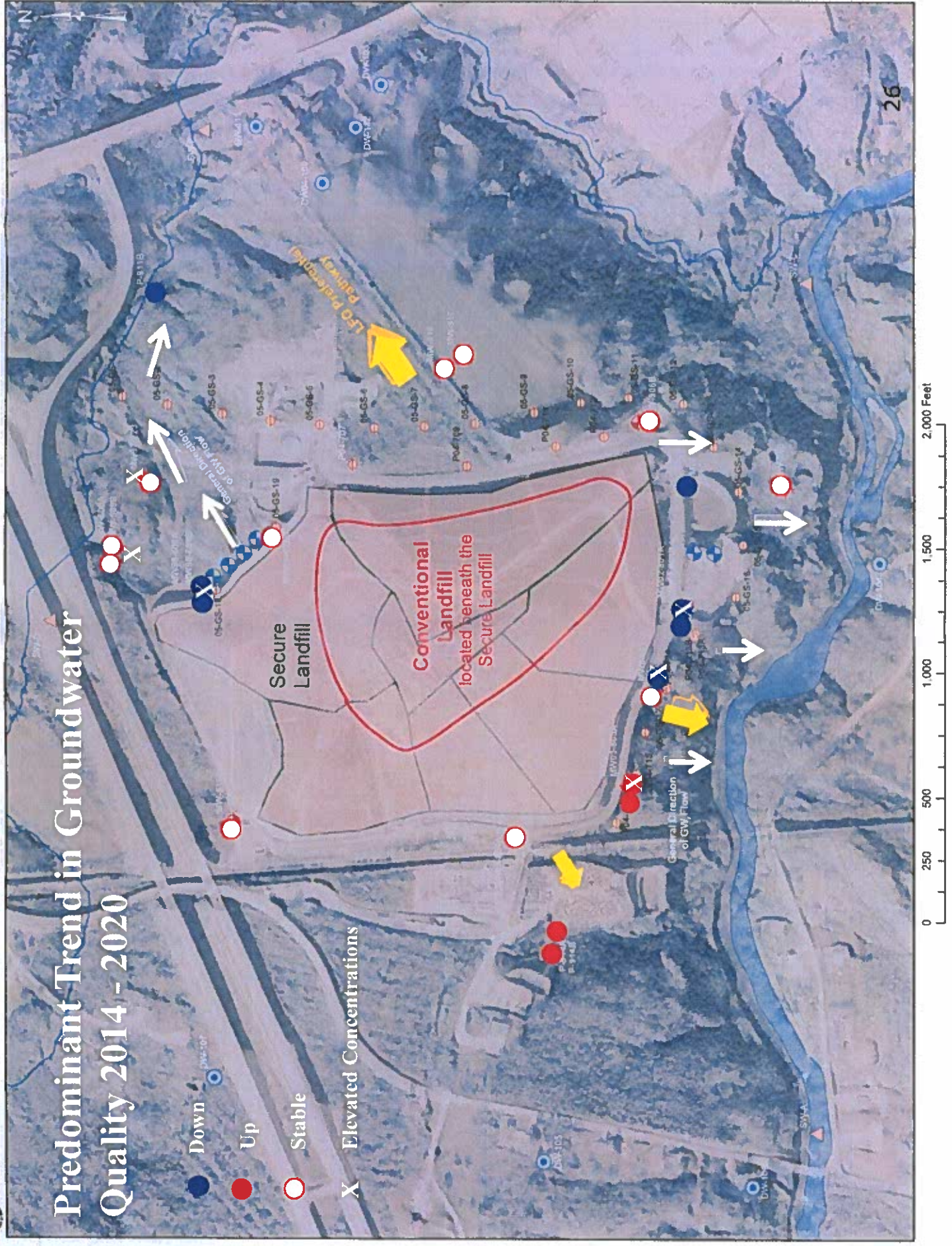


Predominant Trend in Groundwater Quality 2014 - 2020

- Down
- Up
- Stable
- X Elevated Concentrations

Secure
Landfill

Conventional
Landfill
located beneath the
Secure Landfill



Overview of 2020 Operations & Data

- **OPERATIONS:**
 - **SIGNIFICANT INCREASE IN VOLUME PUMPED FROM EXTRACTION WELLS**
 - **LESS GAS REMOVAL (GAS HAS LOWER METHANE)**
 - **ZERO OR NEGATIVE PRESSURE IN 52% OF MEASUREMENTS**
 - **WITH GTE CLOSED – GAS IS NOW BURNED IN A FLARE**
- **WATER QUALITY DATA INDICATE THAT:**
 - **GROUNDWATER MEETS CONDUCTANCE CRITERIA AT MW-906B & IS CLOSE AT MW-200 & -602B**
 - **MANY WELLS HAVE STABLE OR SLOW DOWNWARD TREND BUT ARE STILL SIGNIFICANTLY ELEVATED**
 - **INCREASING TREND SLOWING BUT CONTINUES IN SOME SOUTHWEST WELLS**
 - **ARSENIC CONCENTRATIONS LOWER THAN 2016 PEAK & STABLE OR DECREASING**
 - **SURFACE WATER MEETS APPLICABLE AWQC CRITERIA**

Future Monitoring

- 2020 WAS YEAR 10 OF 30-YEAR POST-CLOSURE PERIOD
- 2010 ENVIRONMENTAL MONITORING PLAN CONTEMPLATED REDUCING FREQUENCY OF MONITORING:
 - Year 1 to 5 = 3 times/year
 - Year 6 to 10 = 2 time/year
 - Year 11 to 30 = 1 time/year
- PTL HAS PROPOSED TO REDUCE FREQUENCY TO 1/YR. MDEP WILL PROVIDE INPUT AFTER REVIEW OF 2020 ANNUAL REPORT
 - Recommend Some Wells Continue at 2 Times/Year, Considering Current Water Quality Data with Some Rising Trends and Many with Elevated Concentrations,
 - Also Recommend that Gas Monitoring Continue at Least 3 Times to Aid in Operation of Gas Extraction System
- PTL SHOULD DETERMINE CAUSE FOR RISING TREND SW OF LANDFILL AND IMPLEMENT CORRECTIVE ACTION TO ACHIEVE TARGETS

TOWN OF HAMPDEN

PUBLIC NOTICE

Nomination papers for the November 2, 2021 Municipal Election are available at the Hampden Town Office, 106 Western Avenue for the following positions:

Councilor – At – Large
(Three 3-year term seats available)

RSU #22 Board of Directors
(Four 3-year term seats available)

Trustee of the Hampden Water District
(Two 3-year term seats available)

Nomination papers must be returned to the Town Clerk by close of business on September 2, 2021.

Gayle C. Decker
Town Clerk



Memorandum

TO: Town Council
FROM: Paula Scott, Town Manager
DATE: July 7, 2021
RE: Interest paid on abatements in FY21

As a follow up to last Monday's meeting and Councilor Esposito's request for information on how much the Town of Hampden paid to tax payers who overpaid their taxes (received abatements) last year; the answer is zero dollars.

When a tax payer believes there is an issue with the valuation of their property, and seeks an abatement, they must pay the tax first before an abatement is issued. If the Assessor agrees with the information provided by the tax payer, he or she will issue an abatement and the Town will refund the money that is being deducted from the bill. Typically, most abatements are issued directly following the receipt of the tax bill which is mailed in August with two due dates of October and April. When a payment is made directly after the bill is received, and then the tax payer is granted an abatement prior to the due date, there is no interest paid on that abated amount. Until the due date arrives, it is considered a pre-payment and we do not pay interest on prepayments. It is the rare circumstance when the Assessor does not grant the abatement and the tax payer goes through the appeals process with the Board of Assessment Review when the "holding" of funds would cause the Town to pay interest on those held funds if the hearing were after the due date or otherwise delayed.

When there is an abatement issued, the standard policy is for the Tax Collector to ask the resident if they would like a refund check, or if they would like the funds applied to the next year's tax as a prepayment. Nine times out of ten the tax payer will choose the credit on the following year. The remainder request the refund. In speaking with the Tax Collector, the Town issued 13 abatements last year. Five of those were issued between August and September, prior to the first installment due date and the remainder were prior to the second installment due date. The ones granted prior to the second due date had not yet paid their taxes so, therefore, could not request the abatement until that point in time.

To summarize, the Town of Hampden paid no interest on abated taxes last year and the probability of any large abatements for FY22 is minimal. Therefore, if the Council chooses a higher interest rate to pay on abated tax amounts, it will likely not be a concern.



TOWN OF HAMPDEN
DEPARTMENT OF PUBLIC WORKS

106 WESTERN AVE.
HAMPDEN, ME 04444

TEL 862-3337

FAX 862-5067

July 15, 2021

To: Paula Scott
From: Victor J. Smith, P.E.
Subject: Proposals for Traffic Signal Design Engineering Services for the Route
1A/Western Ave Traffic Signal

On July 14th, the Town of Hampden received and reviewed one proposal from engineering firms for engineering design services for the Route 1A/Western Avenue traffic signal. The bid proposal was reviewed based on experience and qualifications, knowledge of the proposed project, and lastly price.

After review of the proposal, I have decided that we should award the contract to Sewall based upon their extensive experience and knowledge of this intersection. They were the only firm to put in a proposal and I believe that their price is within my expected range and they have the capability to complete the design work in the required time frame.

ROUTE 1A/WESTERN AVE TRAFFIC SIGNAL DESIGN

BIDDER	QUALIFICATIONS FOR THIS BID	BID AMOUNT
Sewall	Very Qualified	\$35,885



Memorandum

TO: Town Council
FROM: Gayle C. Decker, Town Clerk
DATE: July 15, 2021
RE: Hampden's Voting Place

As you know to comply with the State of Maine Guidelines due to COVID 19, our last three Elections have been held at the Skehan Recreation Center. I heard positive response to this move from Town Voters with some suggesting a permanent move. So, this has been placed on the Agenda for your consideration.

H-d



A RESOLUTION OFFICIALLY DESIGNATING THE WHEELER GRIST MILL BRIDGE

WHEREAS, Benjamin and Elizabeth Burnham Wheeler came from Durham, New Hampshire in 1767 to the territory which eventually became the Town of Hampden; and,

WHEREAS, Benjamin Wheeler chose the mouth of the Souadabscook Stream as the location at which to build their home, erecting a log hut on the north bank of the stream where he and Elizabeth raised their six children; and,

WHEREAS, Benjamin Wheeler realized the need for a saw and grist mill and therefore constructed and operated a successful saw and grist mill on the knoll which was present at the time; and,

WHEREAS, Benjamin and Elizabeth, along with others that came afterwards, organized the township now the Town of Hampden, holding early town meetings in their home along the Souadabscook;

THEREFORE, be it resolved that the Hampden Town Council hereby designate that the bridge formerly known as both the Grist Mill Bridge and the Water Works Bridge, will be officially named the WHEELER GRIST MILL BRIDGE.

Given under our hand on July 19, 2021.

_____	_____
_____	_____
_____	_____
